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George M Chopin

FLORIDA

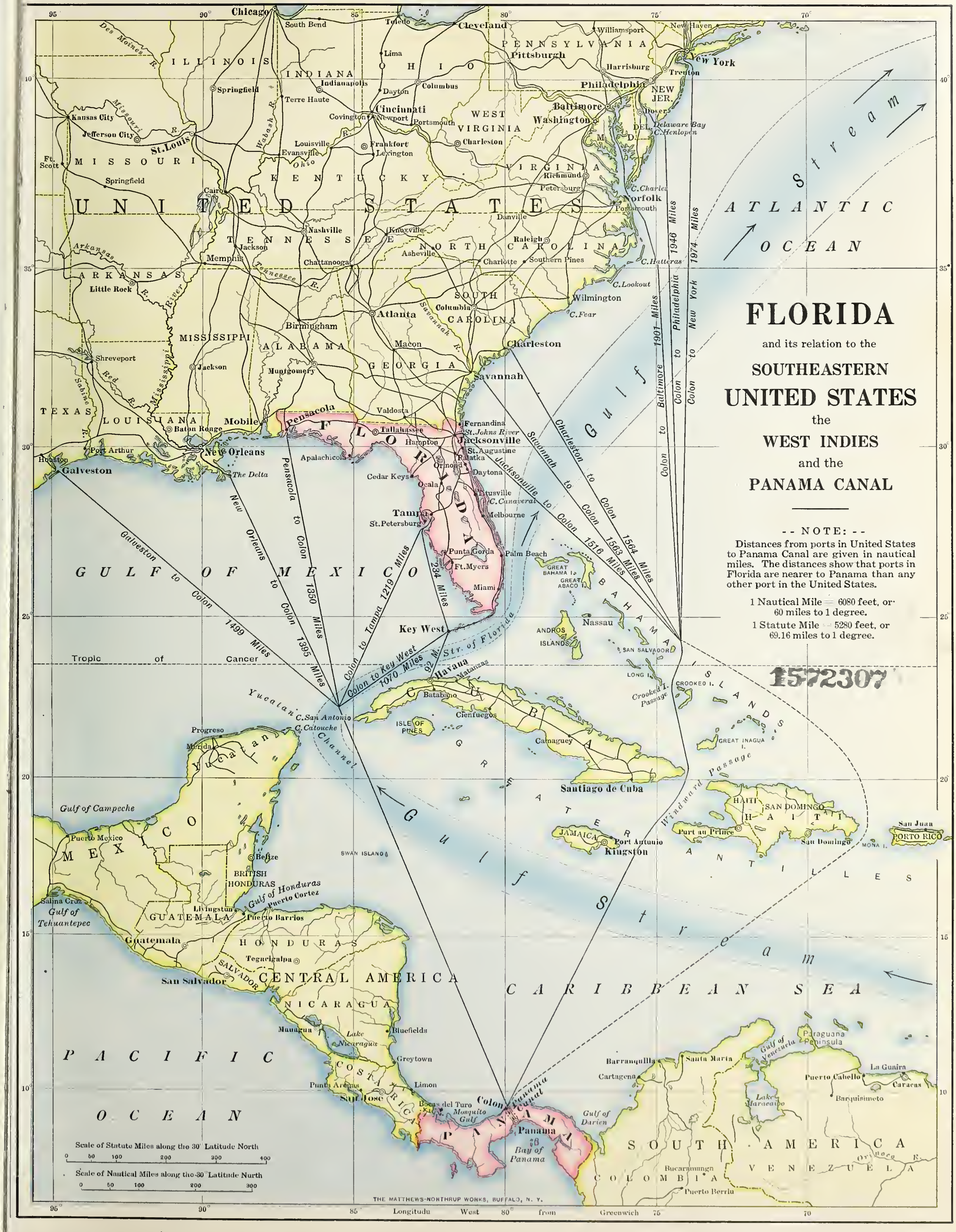
1513—1913

PAST, PRESENT
AND
FUTURE

FOUR HUNDRED YEARS OF WARS AND PEACE AND INDUSTRIAL DEVELOPMENT

By GEORGE M. CHAPIN
JACKSONVILLE, FLORIDA

THE S. J. CLARKE PUBLISHING COMPANY
CHICAGO, ILLINOIS
1914



FLORIDA

and its relation to the

SOUTHEASTERN UNITED STATES

the

WEST INDIES

and the

PANAMA CANAL

-- NOTE: --

Distances from ports in United States to Panama Canal are given in nautical miles. The distances show that ports in Florida are nearer to Panama than any other port in the United States.

1 Nautical Mile = 6080 feet, or 60 miles to 1 degree.

1 Statute Mile = 5280 feet, or 69.16 miles to 1 degree.

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INTRODUCTION

It is well that a community or a commonwealth shall make occasionally an inventory of its possessions which substantiate its claims to commercial importance and social excellence. It is quite as needful for its own information as for the enlightenment of those whom it invites into partnership to reach out for greater things. This story of Florida has been prepared as such an inventory, and the quatro-centennial anniversary of its reclamation from Indian control and its introduction to advancing civilization is an appropriate time for such accounting.

This book is not intended primarily as a history of Florida. It recites the story of present-day conditions, and so much of the past has been recalled as has seemed necessary to give an understanding of the present and to suggest the possibilities of a bright future.

Volumes might be filled with descriptions of Florida's resources of soil and forest and mine. Much might be written of the men and women who have woven their lives into its making and who love the state almost as the mother loves her child. No writer can do more than to suggest in a work of such magnitude. It is a matter of regret that many of Florida's most interesting features, of her past and present, have been passed with hardly more than mention—the legends that people her forests with the heroic leaders of earlier centuries, the unwritten records that lie hidden in the burial mounds of a forgotten race, which await the coming of antiquarians and scientists to be translated for the reading of the world.

Grateful acknowledgment is made for assistance in the preparation of this book to Hon. Henry H. Buckman, of Jacksonville, who freely and generously has devoted many hours from a busy life, to a study of the historical and educational development of the state; to Mr. Charles Willis Ward for the story of Florida's birds and for many and beautiful photographs to illustrate the exhaustive article; to Mr. A. J. Mitchell, section director of the United States Weather Bureau, for information and data of Florida's climatological conditions; to Mr. James E. Mears, for the article on Tampa; to Mr. H. A.

B. McKenzie, for material regarding Putnam county and Palatka; to Mr. Leland J. Henderson, for an article on Pensacola; and to Hon. W. A. McRae, commissioner of agriculture, for a wealth of statistical information regarding the resources of the state.

In whatever respects this book may be incomplete—and no work covering so vast a field can be complete—if it shall serve to enlighten concerning the boundless resources of the state and to hasten and aid in their development, if it shall stimulate scientific study of these resources, much will have been accomplished.

GEORGE M. CHAPIN.

Jacksonville, Florida, December 1, 1913.

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CHAPTER I

HISTORICAL

PERIOD OF SPANISH DOMINATION — 1513-1663

FLORIDA is one of the oldest names connected with the discovery of America. From earliest times it has had a peculiar fascination, first as a land reputed to be rich in gold and precious stones; in later centuries as a wilderness habited by savage tribes who resisted the coming of European civilization; and in more recent years as a section of wonderful natural beauty, whose balmy breezes and semi-tropical verdure made it the resting place for the recuperation of a great nation.

Of its earliest occupants the world knows little or nothing. Although they left records of their existence, archaeologists have not yet read the full meaning of these pages written in sand and stone. Scattered through the state, particularly along its eastern coast and less frequently on the Gulf side, immense accumulations of oyster shell and numerous mounds used for the burial of the dead are found. These contain pieces of pottery, weapons of war, articles of domestic use and occasionally human skulls and bones, suggestions, at least, of an ancient and numerous population. These discoveries suggest also a relationship with the peoples of Yucatan, whose civilization may have been co-temporaneous with that of ancient Egypt. Certain it is that the Florida of today offers to the student of prehistoric times a field that is rich in its possibilities.

The story of Florida is rich, too, in the unwritten legends of its past; legends of the times when Spanish treasure ships roved the seas, when Spanish galleons were wrecked on the islands and reefs that border its coast. Buccaneers and pirates may have used these islands as hiding places for their ill-gotten gains, and even in this twentieth century, these shores are being searched, foot by foot, for the lost treasures that were hidden by Gasparilla and Captain Kidd.

Harassed by the wars of centuries it has come at last to the development of its resources and to take an important part in the commerce of the nations. It is no longer merely a land of flowers, for its mines and forests and soils have given it preeminence in the products of peace and are making it rich beyond the dreams of the avaricious discoverers who first gave it to the world.

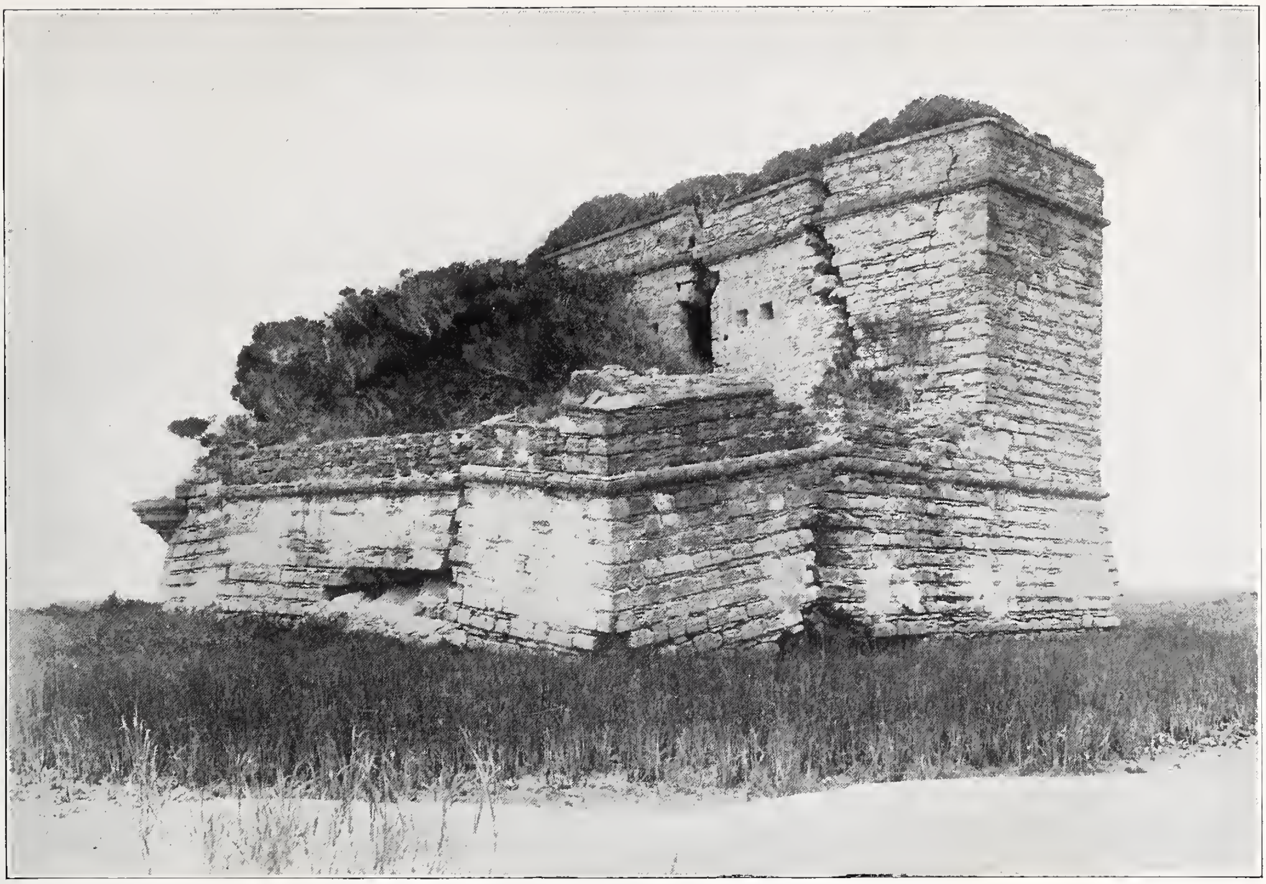
PONCE DE LEON'S DISCOVERIES

Four centuries have passed since Ponce de Leon landed upon the shores of Florida. Born in the Spanish province of Leon, he served in the wars of Ferdinand and Isabella against the Moors in Granada. He was trained in battle and he was born with the Spanish love of adventure. He accompanied Columbus on his second voyage of discovery, but that great commander never set foot upon the mainland of the new continent, for he reached no farther than Watling's Island, some four hundred miles east of the Florida coast. Ponce de Leon's travels only sharpened his appetite for adventure, and his appointment as governor of Hispaniola, the modern Hayti, gave renewed opportunity for its gratification. Reckless and ambitious he organized an expedition to search for gold in the Island of Porto Rico and he had sufficient influence to have himself appointed its governor. He had amassed considerable wealth and he was eager to enter upon newer adventures which, he hoped, would bring him lasting fame and fortune.

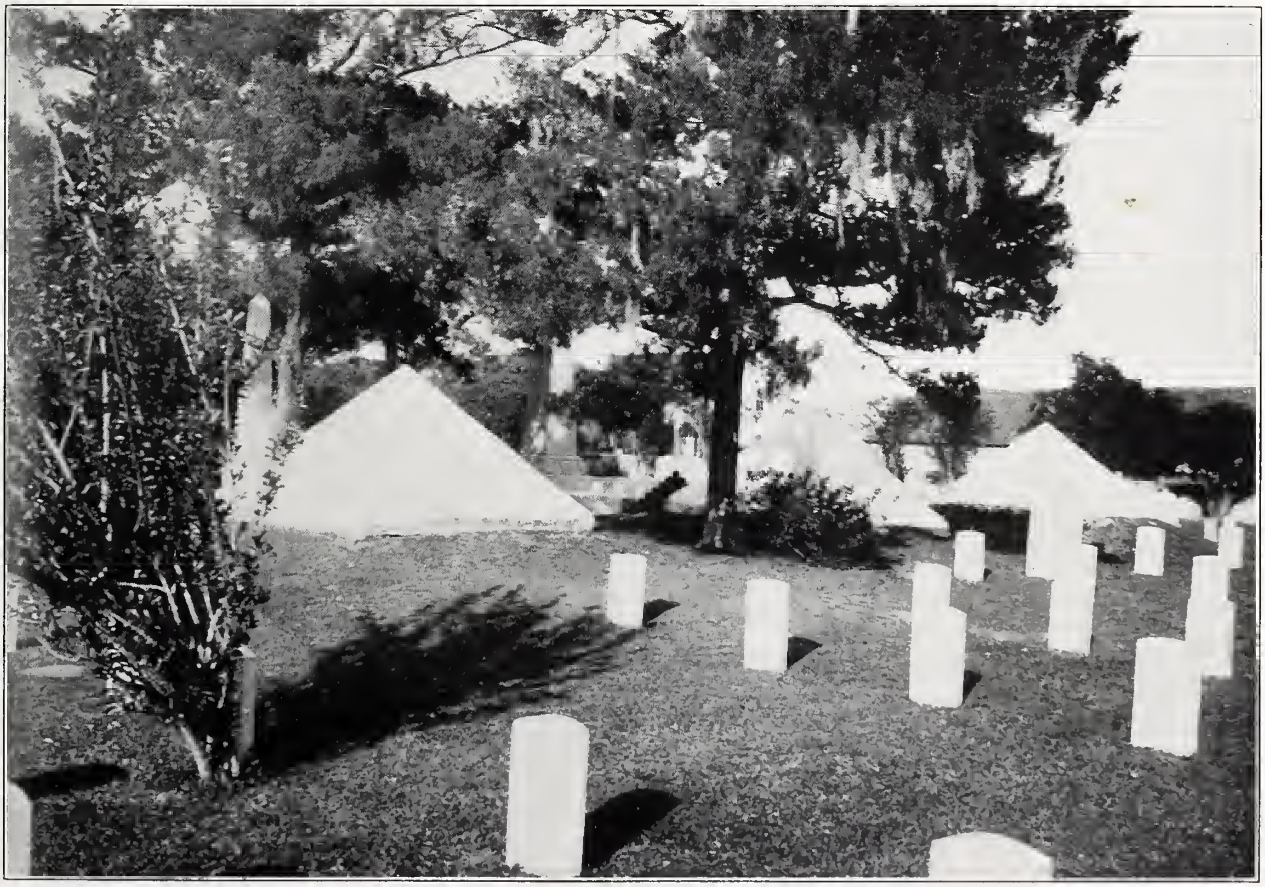
In his wanderings in the western islands he heard frequent and repeated rumors of a Fountain of Youth in a land which abounded in gold and precious stones. It was declared that this fabled spring had the power to give strength to all who should bathe in its marvelous waters and to restore the vigor of youth to those who had passed their physical prime.

At his own expense he equipped three vessels and found numerous followers to accompany him on a voyage of discovery. He set sail from Porto Rico in the spring of 1513, coasting the islands of Hispaniola, thence north to the Bahamas, inquiring everywhere for the wonderful fountain. No one could tell him where it was to be found, but in many places he had renewed reports of its existence in some distant land still further to the west. He continued his search and on March 27, 1513, he saw the dim outlines of land on the horizon. Eagerly crowding on all sail his little fleet coasted along the shores of what he supposed to be an island. He dropped anchor on April 2d and with an imposing host of followers he landed near the present site of St. Augustine.

His landing was on Palm Sunday (Pascua Florida) and to the



FORT MATANZAS. BUILT BY SPANISH ABOUT 1740



BURIAL PLACE OF 107 VICTIMS OF DADE MASSACRE AT NATIONAL CEMETERY, ST. AUGUSTINE
The three pyramidal mounds contain the bones of these soldiers

newly discovered territory he gave the name of Florida. With elaborate ceremony he planted the standards of Spain and took possession in the name of the Spanish king.

THE FOUNTAIN OF YOUTH

His first reception by the natives was hostile, quite in contrast to his previous experiences with the natives of Porto Rico and others of the western islands. But there is evidence that he succeeded in persuading them that he preferred peaceful relations to war, and that they accepted his advances in the spirit in which they were made. Believing that at last he was near the goal of his ambitions, his confidence in the real existence of the remarkable fountain was strengthened by the reports of its location somewhere in the interior of the country whose borders he had touched. Yet none could tell its precise situation. Guided by natives he is said to have visited many of the remarkable springs which then, as now, gushed forth from unknown depths and sources. Bathing in their waters he met only disappointment, for beyond the refreshing gained from plunging into their liquid depths, he found no banishment of the infirmities of his fast maturing years.

It must be remembered that the development of the human intellect in these early days of the sixteenth century had not advanced beyond the ready acceptance of the mysterious and miraculous, which now, four hundred years later, would be received with a smile or a sneer. Therefore, it is not difficult to imagine that this brave old adventurer who had a decidedly personal interest in the discovery of the fountain and in the restoration of his youthful vigor and ambitions, must have experienced bitter disappointment as he retraced his difficult path to the coast where his fleet awaited his return, when he knew that his search had been in vain.

But he had the consciousness of having discovered a new and a rich land which he had added to the domain of Spain, and with this offering to his king, he set sail for Porto Rico and soon afterward returned to Spain. His failure to find the magic fountain made him somewhat the sport of his fellow nobles, but his splendid reputation and the result of his successful explorations secured for him a hearty reception at the Spanish court. He was rewarded with the title of Adelantado, or governor of Florida and he was encouraged to secure colonists to establish settlements in the new possessions. It does not appear, however, that he was offered any substantial aid in this direction.

Ordered by the king to put down an insurrection in the Spanish islands, he failed of success. Disheartened and discouraged by this failure and at the approach of old age, he retired to Porto Rico, where for several years he remained morose and unpopular. During these years of inactivity, reports of Cortez's successes in the conquest of Mexico aroused the Spanish love of adventure and the greed of Spanish noblemen, and Ponce de Leon's ambitions once more were stirred. He dreamed, not now of the fountain of youth, but of founding a great empire in Florida, which should bring undying fame and boundless fortune.

Exhausting his wealth and staking his all upon the outcome, he fitted out two vessels, and in 1521 set sail upon his last voyage to the country he had given to the world. After weathering a series of gales he landed near Cape Sable, the southernmost point of Florida, in a little bay which still bears his name. His landing was fiercely opposed by the natives; many of his followers were killed or wounded and he himself received injuries which hastened the retreat to the ships. A landing was made on the island of Tortugas for supplies and the name was given to the place from the large number of turtles which were found there.

The old soldier, disheartened, sick and depressed, left the shores of Florida, abandoning his high hopes of empire and power, and fled to Cuba. His death from wounds received in battle with the Indians followed within a few days after his arrival.

A dreamer he may have been, but in the attempt to realize his visions he gave to the world a land which has become the realization of prophetic foresight far more ambitious than any he could have had. His name has been perpetuated in various sections of the South and of Florida itself, which bears the name he bestowed.

SPANISH EXPLORATIONS

The discoveries made by Ponce de Leon had been confirmed by other adventurers and explorers even before his death, and several voyages had been made to the coast of Florida. Although the waters had been traversed on both the Atlantic and Gulf sides, it was supposed to be an island which sooner or later would be circumnavigated. It must be remembered also that the name Florida was applied for many years, even for several centuries, to the entire region as far north as Virginia and westward to unknown and unmeasured limits.

The new found land had been explored only near the coast and few of the earlier exploiters were bold enough to venture far from the coast. A vast expanse of territory stretched away, unknown to Spanish invaders. It was supposed to be populated by savage tribes, whom they called Indians, for the earlier discoverers believed they had reached India by the westward route.

The wonderful richness of foliage and the magnificent forests and flowers indicated a soil of surpassing productive capacity, but to these possibilities the Spanish were blind. It is a significant fact, illustrating the character of the first European masters of this land, that during the hundred and fifty years in which they endeavored to establish undisputed sway and to force Spanish Catholicism upon the natives, they depended almost entirely upon the home country, three thousand miles away, for the simplest supplies. Their attempts to meet their needs by pillaging the native stores were a most prolific cause of strife and war. Fish and wild fruits and game were everywhere obtainable, which often they had not the skill or the will to gather, and they lacked the things that insignificant effort expended upon the soil would have provided in abundance. Not infrequently from their lack of foresight, their colonists hovered unpleasantly close to the starvation point.

The fear of unknown but certain dangers in the interior of the new country was, however, offset in some measure by the persistent rumors of gold to be had for the taking. The result was a number of expeditions from Spain and from Cuba that returned with trinkets of the precious metal, which had been secured in trading with the natives along the coast. Diego Miruela in 1516, Fernando de Cordova in 1517, and Lucas Vasquez d'Ayllon in 1520 were among the commanders of these expeditions.

Cordova returning to Cuba from a visit to Mexico, then called New Spain, made a landing in Ponce de Leon Bay to fill his empty water casks. He was set upon by hostile natives and died from wounds received in the attack. Alaminos, who had been Cordova's pilot, persuaded France de Garay, the Spanish governor of Jamaica, to fit out an expedition for exploration. In command of three ships Alaminos followed the coast from Cape Sable to Panuco, now Tampico, Mexico, establishing the northerly line of the Gulf of Mexico and proving that Florida was not an island, but an immense unexplored mainland stretching north and west to unknown limits.

About this time Merazzano, an Italian navigator in the French service, explored the coast from North Carolina to Cape Cod and returning to France aroused great interest by his reports of the country, its richness and the manners and characteristics of the natives.

NARVAEZ' TRAVELS

An exploration more ambitious than any that had preceded it, was that undertaken by Panfilo de Narvaez. In his ignorance of geographical conditions and distances, he believed that Panuco, Mexico, could be reached by an overland march of a few hundred miles from Florida. He secured from the king of Spain the appointment of governor of Florida and at his own expense fitted out five vessels to take him to the coast of this new found territory. With six hundred followers he left Spain in June, 1527. He landed at Hispaniola to refit his damaged fleet. He was detained there by the loss of two vessels until the following April, when having secured other vessels he embarked four hundred men and eighty horses. The expedition was landed at what is now known as Clear Water Harbor, on the Gulf side of Florida, not far from the present location of Tampa.

The standards of Spain were set up with elaborate ceremony and the land was preempted in the name of the king of Spain. Deciding not to establish a colony at this point, Narvaez disembarked three hundred men and the forty horses that had survived the voyage, and giving orders that the fleet should coast along toward the north, keeping in touch with the landing party, he set out for his long tramp toward, if not to, Mexico.

It was a venture of untold hardship and almost unbelievable dangers, which it is unnecessary to follow in detail. Disease and insufficient food rapidly diminished his forces. Unfriendly Indians obstructed the way or opposed it by open hostilities. Nowhere did the bold travelers find traces of the gold which they had been told existed in abundance through the country. At no point along the march where they came to the coast did they discover traces of the fleet which was to succor them. At various places they stopped to recuperate and to collect food supplies from the Indians or from whatever source they could. The natives hearing of their approach burned the villages and left little hope of obtaining sustenance. At or near the present site of St. Marks they halted their forces, which had been still further reduced by sickness and hardship. Hemmed in by hostile tribes in an unknown land, they took council and decided that their only hope of escape lay in building boats and endeavoring to reach either Cuba or Panuco by water.

Within six weeks they built five rude and unseaworthy boats, each one hundred feet long, and set sail in the stormy month of September. Their destination was planned to be Panuco, twelve hundred miles distant, which in their ignorance they supposed to be nearer than Cuba, which was only five hundred miles away. For thirty days the little fleet, unskillfully manned, skirted the shore. Landing occasionally for food and water they were attacked by Indians, losing many of their number. The boats were separated and wrecked; that occupied by Narvaez and some of his priests was carried out to sea and was never heard from again. The other boats were lost and the original force of three hundred men was reduced to less than one hundred. One small party of these survivors on foot and through a hostile country, forced its way westward until it reached a great river. These men under the leadership of De Vaca made but little exploration of the stream, but from the description there is every reason to believe that it was the Mississippi. Although he did not ascend the river, it is to him and not to De Soto that probably belongs the honor of being the first European to see and cross this mighty stream.

The three vessels which Narvaez had left at Clear Water Harbor with orders to follow his progress along the coast, sailed northward for some distance. They failed to find the bay which they had been directed to make their anchorage, and they turned back and came to Espiritu Santo Bay, now called Tampa Bay. Two of the ships continued their search for Narvaez and his party for nearly a year, and then sailed to Mexico.

De Vaca and three of his companions were captured by the Indians and they owed their lives to the idea that they were possessed of healing powers. By the manifest favor of Providence they were enabled to effect some seemingly remarkable cures, and these successes strengthened their chances for life and for eventual escape. For several years they wandered among the various Indian tribes, occasionally making their way by trading and barter, and after almost incredible hardships they succeeded in reaching Panuco and were returned to Spain, more than ten years after they had left it for this expedition.

DE SOTO'S EXPEDITION

De Vaca told marvelous tales of the richness of the country he had explored, and he sought to be appointed governor of Florida in order that he might return with authority and means and men to colonize it. But at this time, 1539, Hernando de Soto, one of the favorite cavaliers at the Spanish court, was planning an expedition for the conquest of the new and little known land. Already he had won renown and riches by his conquest of Peru in 1536, and he had returned to Spain with a large fortune as his share of the booty of that campaign.

As governor of Cuba and Florida and a marquis of Spain he set out with a splendidly equipped fleet, a thousand men at arms, many priests and followers. He landed on the west coast of Florida at what is now known as Tampa Bay, May 25, 1539. It was but a few leagues south of the landing place of Narvaez, and to the bay he gave the name of Espiritu Santo.

The avowed purpose of De Soto's expedition was conquest and gold. He had come to Florida prepared, however, to a limited extent to establish settlements and to colonize the country. Prospecting through scouting parties, his little army started on its march through the wilderness and into unknown and undreamed of hardships and dangers. The route took them further into the interior and over a longer road than had yet been undertaken by any previous Caucasian explorers on the new continent. Their way was determined, in large measure, by the reports of gold, always gold, in some location still ahead of them and still to be reached by arduous toil through hostile sections and by bloody encounters with the Indians.

From the Indian village of Hirrihigua, probably on the present site of Tampa, the way led the expedition across the Withlacoochee river, thence to the Indian settlement of Ocali, probably where the city of Ocala now stands in Marion county. The difficulty of connecting the former names of localities with the present-day titles of rivers and towns, makes the tracing of De Soto's path rather uncertain. It seems probable, however, that his course from Ocali was in a northwesterly direction. He crossed the Suwanee river near Old Town in Lafayette county, and traversed what is now embraced in the counties of Madison, Leon and Lafayette and Jefferson, and it is evident that he explored quite thoroughly the territory between Monticello and Tallahassee. It appears that he did not go west of the Apalachicola river.

From this section his route seems to have been toward the north and northeast. Tracing it, so far as is possible by the names of places which have been preserved in the records of this journeyings, he crossed the Altamaha and Savannah rivers, passed through the middle sections of Georgia, thence into the hill country of Northern Georgia, where,

NEW SMYRNA WATER FRONT

rumor told him, were deposits of gold and other valuable minerals. Crossing the Etowah river, he visited the settlement of Chiapa, where now stands the city of Rome, Georgia. From this point the course led south and west to Mauvilla, about one hundred and fifty miles north of Pensacola, thence in a northwesterly direction to the Mississippi river, where he is believed to have crossed a few miles south of the present site of Memphis.

DISCOVERY OF THE MISSISSIPPI

His discovery of the Mississippi was made in April, 1541, almost two years after his landing on the west coast of Florida. The summer and autumn of this year were spent in exploring the country bordering and west of the great river, and the winter was passed in camp near the White river.

Up to this time De Soto had lost two hundred and fifty of his men besides many horses. Evidently he longed to return to his native land for he dispatched a scouting party to investigate the possibility of reaching the Gulf of Mexico by way of the Mississippi river. The report was that such a route to sea was impracticable. The gallant chief, for the first time in his daring leadership, became discouraged. Soon he was attacked by fever and sank into despondency. Death came to his relief May 21, 1542, and to preserve his body from the ravages of the Indians whom he had robbed and punished, his followers wrapped it in his mantle and at midnight sunk it in the middle of the river, whose discovery has been credited to him by the common consent of historians.

His march of two thousand miles from Espiritu Santo Bay had been marked by a series of bloody oppositions by the Indians whom he had encountered along the way. Hundreds of them had fallen before the guns of his little army; he had robbed their stores of food and grain; he had burned their villages and to add to his accumulations of gold and pearls he had carried away the queen of the most prosperous tribe and had robbed the graves of their dead. His path had been one of devastation, desolation, and ruin. But from the military viewpoint, it was one of the most masterly in history. He forced his way through an unknown country fighting continuously against savage tribes, maintaining his men and followers from the country as they advanced, inspiring to the end a devotion on their part than which no commander of ancient or modern times appears to have aroused a greater faith, and when all the conditions and circumstances are considered, this expedition must rank high in the history of military exploit.

When his death seemed imminent he was asked to name his successor to lead the expedition. His choice was Luis Muscoza de Alvarado. The new leader undertook to follow the supposed route of De Vaca to reach Mexico by an overland march, but after wandering through the country from June to December, he returned to the Mississippi, built boats in which in July, 1543, the party descended the river to the Gulf and some two months later by following the coast, they reached Panuco, Mexico,—three hundred and eleven survivors of the thousand men who had left Tampa almost three and a half years before.

CATHOLIC MISSIONS

Other expeditions for conquest or for the conversion of the native Florida tribes to Spanish Catholicism followed. Four Franciscan brothers came from Havana in 1549. They landed in Espiritu Santo Bay to labor for the spiritual welfare of the Indians. Three of them were murdered almost as they touched the shore, thus early in the history of the country staining its soil with the blood of religious martyrdom. The last of these expeditions of conquest was that commanded by Tristan de Luna, which was equipped by the Spanish viceroy of Mexico, and sailed from Vera Cruz in August, 1559. It landed at the present site of Pensacola, about one thousand soldiers, sailors, priests and friars. A reconnoitering party explored the country as far north as Tennessee, finding many traces of De Soto's travels. Their reports encouraged De Luna to undertake to colonize the lands they had explored, but his men demanded that they return home and many of them deserted on the supply ships that had come to their relief. De Luna was soon recalled and this project for colonizing Florida was abandoned. The historical significance of De Luna's expedition lies in the fact that it was the first settlement or temporary occupation by Europeans of the present site of Pensacola, and it was the first exploration of the Alabama and Tennessee territory.

This practically was the last of the Spanish expeditions, which from the time of De Soto, almost fifty years before, had devastated the territory known as Florida. The object of these incursions had been the acquisition of gold and silver and pearls. Their progress had been marked by despoliation and slaughter. The cause of Catholicism had gained no lasting foothold among the Indians. The overmastering passion had been to conquer and rob the natives and not to develop the resources of the soil. The invaders had sought, not to create wealth but to seize and appropriate it wherever they had found it, regardless of the suffering, misery and destruction they caused in gaining their ends. Their efforts had proved fruitless. They had met only with hardships and had encountered relentless and cruel foes, whose primitive methods of warfare alone had prevented them from sweeping their would-be masters into the sea.

The net result of the half century of aggressive oppression was the dim knowledge of a land of unknown limits, which the invaders pronounced "the richest country in the world." Not a single settlement of white men had been planted permanently in all the vast region and nothing had been accomplished toward introducing European civilization into the country.

HUGUENOT SETTLEMENT

From this period, about 1562, may be dated a new epoch in the development of Florida, for another nation had been awakened to a realization of its possibilities. In strange contrast to the incentives that had brought the Spanish to these shores, the idea of liberty of conscience and of freedom to worship God invited the first French settlements to the American continent. Religious war was being waged in France under Charles IX as the head of the Catholic party, and Admiral Chastellany, better known as Coligny, as the leader of French Protestantism. The discoveries by the Spanish on the western hemisphere had suggested to Coligny the idea of founding a colony across the sea, which might extend French possessions and afford a refuge for the Huguenots, if their defeat at home should demand such a haven.

Under Captain Jean Ribaut (spelled Ribault by some writers) two ships sailed from France in February, 1562, for Florida shores. They had been equipped by Coligny and after a long voyage they sighted land not far from the present site of St. Augustine. Coasting along the shore for some distance, they entered the mouth of the river now known as the St. Johns. Landing, the venturesome Huguenots erected a stone monument on which was cut the arms of France, thus staking their claim for the French crown.

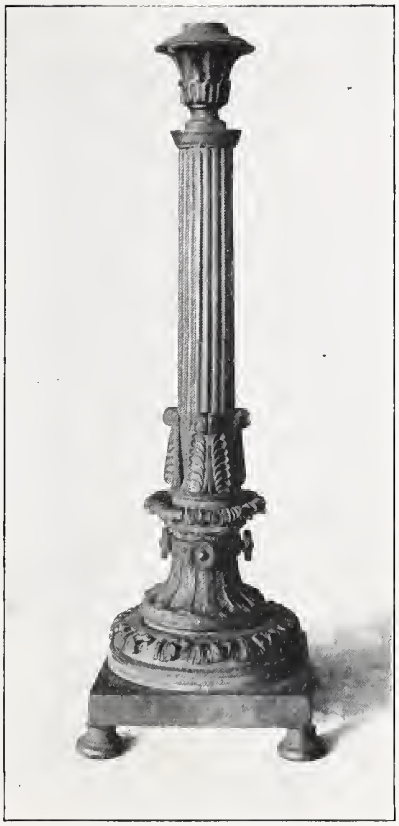
Making but a short stay the expedition reembarked and sailed northward along the Atlantic coast to the harbor of Port Royal. Here a little colony was established and a fort erected, which was manned by twenty-five volunteers from Ribaut's followers. He then went back to France for supplies and reinforcements, planning a speedy return to the colony. He found civil war raging in France and the little garrison at Charlesfort was neglected, if not forgotten. Discontent and mutiny disorganized the colony; the commander was brutal and severe in his discipline and was murdered by his men. The survivors attempting to return to France in a boat of their own construction were rescued by an English captain. Charlesfort was never reoccupied by the French and its exact location is unknown, but it is supposed to have been on one of the islands near Beaufort, South Carolina.

LAUDONNIERE'S EXPEDITION

Following the temporary restoration of peace in France, Coligny sent another expedition to Florida. Three ships were dispatched under Rene de Laudonniere. The company included representatives of some of the best families of France, besides artisans, sailors and soldiers, but apparently few agriculturists were among the number. They touched the coast of Florida in June, 1564, and probably in the harbor of St. Augustine. After exploring the coast as far north as Nassau Sound and the St. Mary's river, near where Fernandina now stands, they entered the St. Johns river to which Ribaut two years earlier, had given the name The River of May. Going up the stream nearly six miles they reached what is now known as St. Johns Bluff.

This high bank of the river, commanding a splendid view of the surrounding country, has gathered much interest during the passing centuries of Florida's history. It has been used time and again for war operations, offensive and defensive. It was here that two of the bloodiest scenes in the struggle for supremacy of the country were enacted. It was here that fortifications were erected to repel the coming of Oglethorpe when the Georgia general was advancing to attack St. Augustine. Here a strong battery of artillery was set up for the defense of Jacksonville during the Civil war, and during the Spanish-American war it was made the basing point for mining the river and the lookout for Spanish vessels when the fleet commanded by the wily Cervera was lost to the knowledge of the world for several weeks, in 1898.

Laudonniere explored the river and the surrounding territory while awaiting reinforcements and supplies from the home country. But he, too, had to contend against discontent and mutiny, and his free use of the death penalty as a method of discipline weakened rather than strengthened his position. The settlement while awaiting the



ALTAR RELIC FOUND IN A
SPANISH MISSION

coming of supplies, became reckless in the use of what it had and entirely neglectful of raising anything from the rich soil to meet its necessities. Accordingly within the year starvation menaced it. An attempt to levy on the Indians proved fruitless but it aroused their dormant hostility. An English fleet under Sir John Hawkins, calling at the port in August, 1565, offered to carry the garrison back to England, from which it would have been possible to reach France. Laudonniere refused the offer, but his men insisted on returning to France with the English fleet unless other provision were made for their rescue. The French commander purchased one ship from the Englishman and with another that had been constructed by the colonists, an expedition was fitted out for the return to France. Hardly had anchor been raised when a strange fleet was sighted on the horizon.

It was the third Huguenot expedition sent by Coligny and it came as a timely reinforcement to Laudonniere's almost exhausted colony. It was landed at Fort Caroline, which had been constructed by Laudonniere and his forces at or near St. Johns Bluff, and the date of this landing—August 28, 1565—was most important in the history of Florida. This expedition brought six hundred and fifty persons, representatives of French aristocracy as well as tradesmen and soldiers, and it was under command of Jean Ribaut, who had led the previous expedition to Charlesfort, three years before.

MENENDEZ' PERSECUTIONS

By a strange coincidence another expedition was landing the same day at St. Augustine, thirty-six miles south on the Florida coast. It was under the command of Pedro Menendez, and had been sent by the Spanish government to drive the French Huguenots from Florida soil.

Menendez, who was high in the councils of the Spanish throne, was most bitter in his hatred of Protestantism, and, therefore, he was deemed especially fitted to undertake this task. His landing at St. Augustine was effected on the day devoted in the Roman calendar to Saint Augustine, and he gave the place the name which has remained through the centuries, making it the oldest continuous European settlement on American soil.

Spain claimed by right of discovery and military occupation all the territory known as Florida, and it resented invasion by other nations. There is evidence that it was the intention of this great Catholic country to resist all attempts by the hated Protestantism of France to plant its banners on Florida soil and to prevent at all hazards the conversion of the Indians to that religion. There is also reason to believe that the plans of Coligny had been revealed to the Spanish court by his enemies closer than he to the French throne.

Menendez, with the authority of Philip II of Spain behind him, had expended his entire fortune and all he could borrow from his friends in equipping this fleet of thirty-four vessels for this expedition. He had under his command a force of twenty-six hundred persons, including soldiers, sailors, priests and monks. His voyage had been delayed by storm and adverse winds and when he reached Porto Rico, early in August, he had less than one-third of his force with him. Learning here of Ribaut's movements, he pushed on with his fastest vessels and his arrival at St. Augustine and that of his hated French rival, twelve leagues up the coast on the same day, were unknown to each other.

A subsequent encounter of the two fleets was at too long range to be disastrous to either, and Menendez determined to make a land attack upon the French at Fort Caroline. Ribaut, however, believed that his best chances for annihilating the Spanish forces were in a naval battle, and accordingly he embarked most of the fighting men from Fort Caroline on his vessels and sailed toward St. Augustine.

MASSACRES AT FORT CAROLINE AND MATANZAS

Menendez marching his six hundred fighting men across the forty miles between St. Augustine and Fort Caroline, surprised and quickly captured the little weakened garrison of less than two hundred, including soldiers, artisans, servants, women and children. Laudonniere fled with other fugitives, and those who were unable to escape met with horrible slaughter. Menendez claimed in his subsequent report of the event, that he gave orders that all persons under fifteen years of age and all cripples should be spared, but even this seems to be contradicted by the facts related by other authorities. A few of the garrison were spared for a more ignominious death, for Menendez hanged them from the oaks of the surrounding forest regardless of the usages of warfare, and over their dangling bodies he placed this inscription: "Not as Frenchmen, but as Lutherans."

His hatred of French Protestantism was not sated with the revenge he had accomplished. He changed the name of the captured fortress and called it San Mateo, and he gave the same name to the river that flowed below the bluffs on which the fort was built. He garrisoned the place with three hundred men and returned with the remainder of his forces to St. Augustine.

Ribaut with his fleet preparing to attack the Spaniards anchored off St. Augustine, but he was overtaken by a great storm and driven southward. Every vessel was wrecked on the coast between Matanzas Inlet and Cape Canaveral. With two hundred of his men he escaped to the shore not far south of Matanzas and this force was joined by those from some of the other ships that had been wrecked further south.

Within a few hours after his return from the bloody scenes at Fort Caroline, Menendez was informed that a large body of the French were south of Matanzas making their way northward. Quickly gathering his armed men he made his way to the southern end of Anastasia Island, and across the Matanzas Inlet he saw some two hundred of the wrecked Frenchmen, preparing to cross the arm of the sea. A parley followed, in which the Spanish commander demanded unconditional surrender, but promised clemency. The captives were brought across the inlet, ten at a time, and they were told that as they numbered many more than their captors, it was necessary that their hands be tied behind them so that they might be unable to overpower the sixty or eighty Spanish soldiers under Menendez. When the entire force had been brought to the north side of the inlet and all had been bound with cords, the march toward St. Augustine was begun. Menendez, however, had given orders that when a certain point in the march had been reached, every captive should be killed, and the brutal command was obeyed literally, for it is said that not one of the French captives escaped.

Indian runners on the following day brought word to Menendez, when he was resting from his arduous work of slaughter, that another party of Frenchmen was advancing up the coast, and again gathering his soldiers, the Spaniard went to the lower point of Anastasia Island. The party included some three hundred and fifty of the shipwrecked Frenchmen under command of Ribaut himself. Ignorant of the massacre at Fort Caroline and believing the promises made them by Menendez, Ribaut and his followers parleyed for terms of surrender, offering large sums for the ransom of themselves. This was refused, but Menendez promised, verbally and in writing, that the captives should be treated with clemency. Relying on his most solemn oath, the Frenchmen, after a night of deliberation, surrendered, but not all of them, for during that night two hundred deserted the camp and turned their faces southward, toward dangers that they knew not of, rather than trust the treacherous Spanish commander.

Ribaut and his companions were brought across the inlet ten at a time, and as each squad reached the shore, the captives were tied and rendered helpless and then were shown the bodies of the company, scattered on the sand, where they had fallen but a few days before. Realizing the fate that was awaiting them, they gave themselves over to cursing their captors or to preparing themselves for death. The same fate that had overtaken their former comrades was meted out to them, a few artisans, who professed themselves Catholics, being spared and taken to St. Augustine, where they were incorporated into the Spanish colony.

Early in November word was brought to St. Augustine that the remainder of the shipwrecked French forces, the two hundred who had turned back from the surrender of Ribaut at Matanzas, were intrenching themselves near Cape Canaveral, and were endeavoring to build a boat from the fragments of their wrecked ships. A third time gathering his forces, Menendez made a forced march to attack the Frenchmen. At his appearance twenty of them fled to the forest and were lost forever to recorded history. The remainder, daring the fate of their former companions, surrendered and were spared, for the brutal Spaniard evidently considered their small number no menace to his power. They were brought to St. Augustine and became a part of the garrison there.

One Frenchman, who escaped the second massacre at Matanzas, eventually reached France, and told the story of the horrible butcheries committed by Menendez, which had been inspired by his relentless cruelty and by religious fanaticism. The news of the atrocity brought a feeling of horror to all Europe, outside of Spain, even in that day of bloody deeds, and it stamped with infamy the name of Menendez, which all the centuries of time will fail to remove. Yet it brought him the highest commendation from the Spanish king, Philip II, and a letter of praise for his religious zeal, from Pope Pius V.

MENENDEZ' ADMINISTRATION

The Huguenots, among whom was Laudonniere, who had escaped the attack on Fort Caroline, reached three small vessels which were still anchored at the mouth of the St. Johns river, and in the course of time they came to their home country. With their departure, the efforts of the French to plant a colony in Florida were ended.

Having driven the hated Protestants from Florida, over which the Spanish throne claimed possession and exclusive dominion, Menendez explored the Atlantic coast as far north as Chesapeake Bay and traversed the interior, making friendly overtures to the Indian chiefs along the coast of Carolina and Georgia. It is probable that he ascended the St. Johns river to its source. Within eighteen months after his arrival in Florida, he constructed fortifications at St. Augustine, on the site of Fort Caroline, which he named San Mateo, at Avista, on Amelia Island near Fernandina, and at St. Helena. He built blockhouses at several other points and at each of these he established and maintained garrisons or missions for the spread of the Catholic religion among the Indians.

But his administration aroused insubordination among his forces. The garrisons at St. Augustine and San Mateo mutinied and his men determined to abandon the country. Many who had deserted were shipwrecked along the reefs of the lower Florida coast; others reached Spain and spread reports that were inimical to Menendez' plans in the new country, and dissuaded others from joining their fortunes with his. He returned to Spain in the spring of 1567, and was welcomed cordially, but he found great difficulty in obtaining the substantial aid he needed to maintain his colonies and missions in Florida. His anxiety for the safety of these settlements was not lessened by reports that the French were planning retaliatory expeditions to avenge the massacres at Fort Caroline and Matanzas Inlet.

DE GOURGES' REVENGE

That this was not an idle report was proved by the expedition led by Dominic de Gourges, a French soldier who had suffered much as a prisoner of war from the Spaniards. His desires for revenge were not inspired by religious fanaticism, for there is evidence that he was himself a Romanist, but he burned to avenge the insult to the French nation, which the king and court of France had noticed only by half-hearted remonstrances to the Spanish throne. With a hundred soldiers and fifty armed sailors, he embarked from France on August 22, 1567, ostensibly for a voyage to Africa to procure slaves. Reaching Cape San Antonio, the eastern point of Cuba, he revealed his plans to his little company. Quickly he enlisted their enthusiastic support, and they proceeded to the mouth of the St. Johns river, where they were saluted by the Spanish forts on either side of the river, and which they answered, encouraging the idea that De Gourges and his followers were Spaniards. Then the expedition sailed to the St. Mary's river, the present harbor of Fernandina.

By a fortunate combination of circumstances, he was enabled to enlist the services of two Indian chiefs, Satourioura and his nephew, Olocatora, against their hated foes, the Spaniards. The chiefs assembled their warriors, a thousand or more of them, and marched across the country to the blockhouse on Amelia Island, thence across Fort George Island. By a sudden attack, they annihilated the Spanish garrison on the north side of the St. Johns river, under the immediate command of De Gourges, who with Olocatora, led the attacking forces. Swimming the river, the fort and garrison on the south side were attacked and vanquished. Those who escaped, attempted to reach Fort San Mateo, on the same side of the river, some five or six miles further up from the mouth, but they were killed by the Indians.

Fort San Mateo was then besieged, and its capture was soon accomplished. The thirty survivors were brought before De Gourges. He rehearsed to them the wrongs committed by Menendez against the subjects of the French king, and he told them that he had come to avenge the insults to his country. Then he hanged them from the oaks under whose shade the Huguenots had suffered a similar fate two years before. Paraphrasing the epitaph put up by Menendez, he marked the place with a pine board, on which he had burned with a hot iron the words: "I do this not as unto Spaniards nor mariners, but as to traitors, thieves and murderers."

The Indian allies willingly destroyed the fort and urged De Gourges to complete his work by the destruction of the Spanish garrison and fortifications at St. Augustine, but believing his forces inadequate to the task, he dismissed his allies with the promise that he would return within a twelvemonth with a larger and sufficient force. But the anti-Huguenot faction was in power and the temper of the French court was not favorable to his plans.

MENENDEZ' RETURN TO FLORIDA

Menendez returning to Florida in March, 1568, learned on his arrival of the swift retribution inflicted by De Gourges. He found his garrisons demoralized and suffering from a lack of food. The Indians, aroused by the successful incursion of De Gourges, were everywhere in revolt against Spanish power and authority. Nevertheless, Menendez devoted himself earnestly to restoring the military posts along the coast. He brought with him ten Franciscan priests, and he began again to establish Catholic missions among the native tribes, extending his efforts as far north as Chesapeake Bay. But his success was doubtful, for while the natives listened attentively so long as they were generously supplied with food, their religious zeal promptly waned when these supplies were shortened.

The importance of Florida as a foreign possession soon declined in public estimation. No great deposits of gold had been found within its confines, and those who had pioneered the country had had to be sustained by constant supplies from the home country. Finally, delegating his authority to Pedro Menendez Marquis, a nephew, Menendez returned to Spain, where he died in 1574.

With his departure, the aggressive policy of Spain may be said to have been ended in the territory which Ponce de Leon had given to his fatherland. It is true that efforts, more or less effective, were made to maintain the dog-in-the-manger policy of holding the country by force of arms, without developing its material resources, and resisting the efforts of other nations to undertake such development. For a hundred years after the death of Menendez, Spanish power was employed in Florida, mainly to quiet the uprisings of hostile Indians, to establish Catholic missions among them, and in making a futile resistance to the growing power of the French and English on the new continent.

Sir Francis Drake, in 1580, attacked the garrison at St. Augustine. He destroyed the fort and sacked the treasure chest that he found. The little settlement was rebuilt, and in 1593, twelve Franciscan brothers made it their headquarters for extending the Catholic missions and religion throughout the peninsula.

Five years later began a series of attacks and massacres upon the Spanish missions by the Indians, but not discouraged by these disasters the missionaries became even more aggressive, and increasing success seemed to crown their efforts. War between the Spanish colonists and the Apalachee Indians broke out in 1638, in which the settlers were substantially victorious.

FORTIFICATIONS OF ST. AUGUSTINE

So important in the history of Florida have been the activities centering about St. Augustine, that a description of the old city and of its fortifications is not out of place here. Its location is near the spot where Ponce de Leon landed in 1513. The city itself was founded by Menendez in 1565, the first permanent settlement by Europeans on

American soil. The location is on a narrow peninsula, which in former times could be approached by land, only from the north. The St. Sebastian river and the swamps on the west join the Matanzas river a short distance south of the town. Across the Matanzas, which borders the city on the east, lies Anastasia Island, separating it from the ocean and extending about eighteen miles south to Matanzas Inlet.

Across the little peninsula, east and west, was built a line of fortifications, which barred easy approach. From the fort at the edge of the Matanzas river, a deep ditch extended to the St. Sebastian river, which was flooded at high tide. Entrance to the town was over a drawbridge across the ditch and through a massive gate in the line of fortifications. Earthworks extended along the St. Sebastian on the west of the town and around to the Matanzas on the south. When night came the drawbridge was raised, the gate was closed and the guards took their station.

Of these fortifications, only the gate and a small portion of the adjoining walls remain, picturesque reminders of those earlier days when war was the vocation of every able-bodied man. The growth of the modern St. Augustine has extended far beyond the gates and they stand today in the midst of strangely incongruous surroundings.

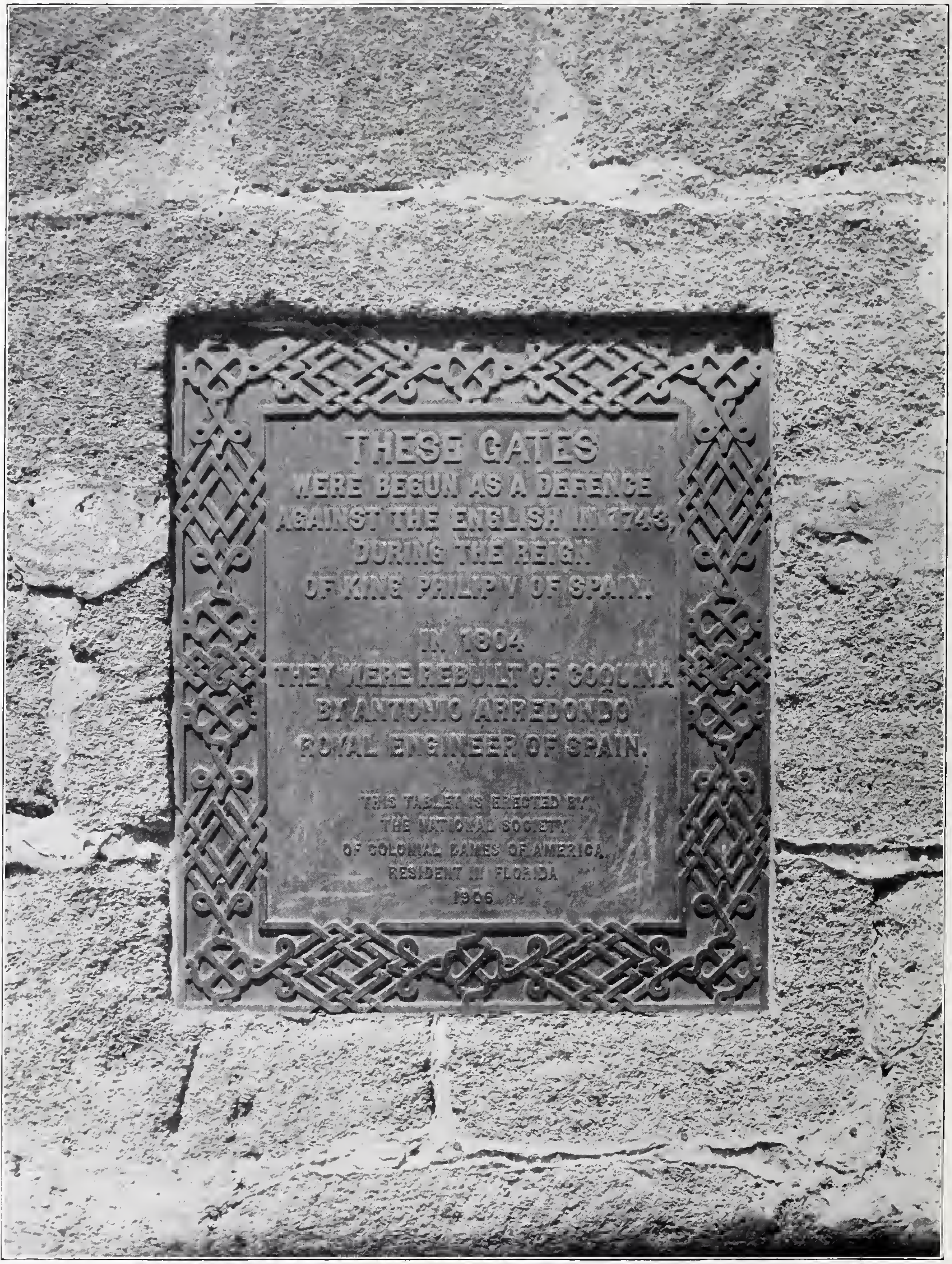
Bronze Tablet on the old City Gates at St. Augustine, Florida:

THESE GATES
WERE BEGUN AS A DEFENCE
AGAINST THE ENGLISH IN 1743
DURING THE REIGN
OF KING PHILIP V OF SPAIN.
IN 1804
THEY WERE REBUILT OF COQUINA
BY ANTONIO ARRENDONDO
ROYAL ENGINEER OF SPAIN.

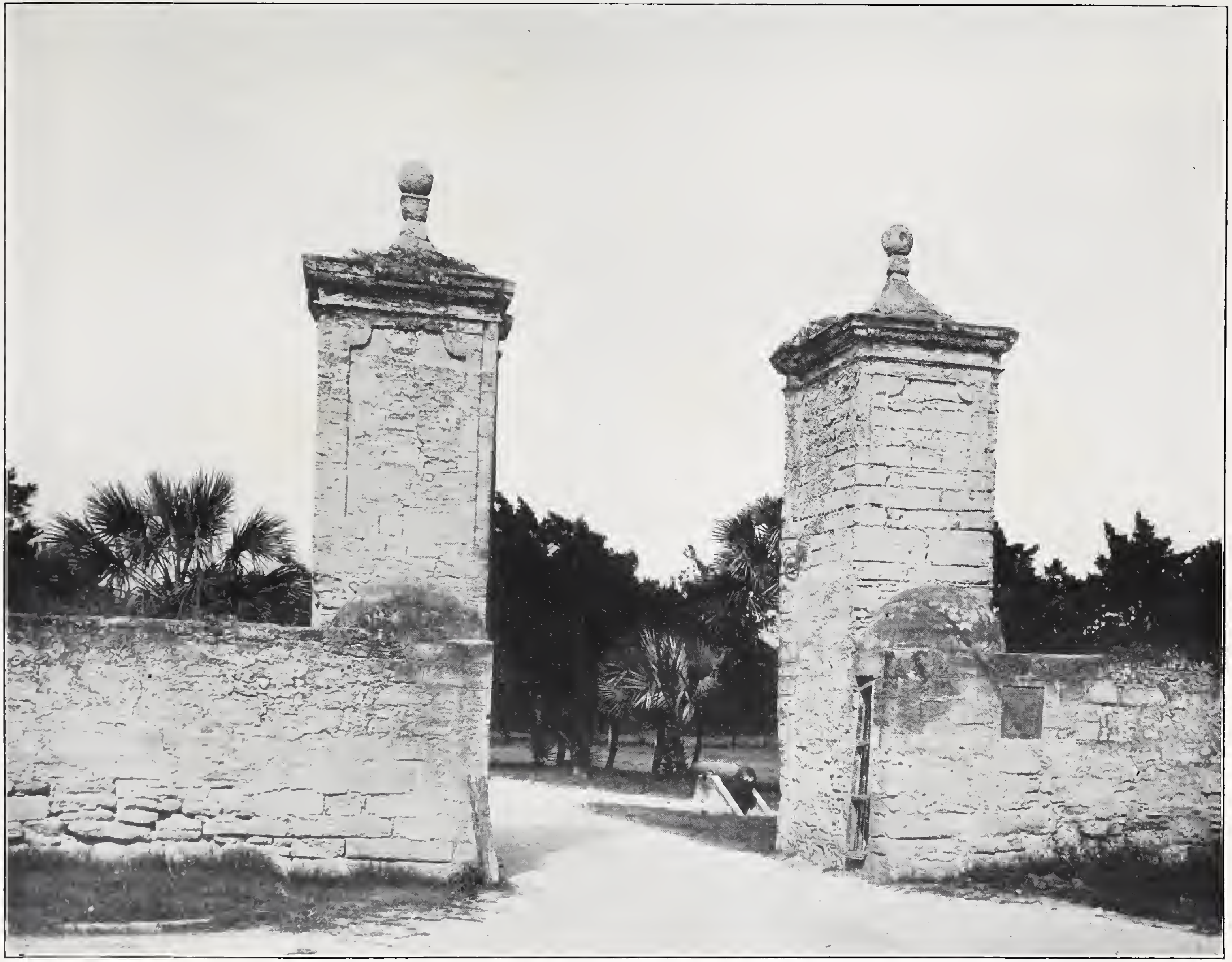
THIS TABLET IS ERECTED BY
THE NATIONAL SOCIETY
OF COLONIAL DAMES OF AMERICA
RESIDENT IN FLORIDA
1906.

FORT MARION

Almost from the first occupation of the place, a fort has been located just north of the old city and outside its ancient walls. The



BRONZE TABLET ON CITY GATES AT ST. AUGUSTINE



OLD CITY GATES OF ST. AUGUSTINE'S ANCIENT FORTIFICATIONS

site commands the approach by land from the north and by sea from the east. "In different forms and bearing different names it has been established for more than three centuries. For two hundred years it was St. Augustine and St. Augustine was Florida At first a rude and temporary structure of pine logs, the fortifications expanded in magnitude, until it developed into the great stone fortress as it stands today. In the years of its building the progress of the work was slow. Convicts from Spain and Mexico, and Indians and slaves quarried the coquina rock on Anastasia Island, ferried it across the Matanzas river, and toiled at the walls. The work was considered finished in 1756.

"The story is told, that the King of Spain, counting up the cost, fancied that the fort must have been built of gold, and it is easy to imagine that the successive governors-general grew rich from their manipulations of the great work."

The fort was called San Marco, but this name was changed to Fort Marion, in honor of the Revolutionary hero, General Francis Marion, soon after Florida became a possession of the United States.

This fort which is the only example of mediaeval fortification existing on this continent, is a fine sample of the science of military engineering as it had been developed in the early part of the eighteenth century. The inner court, one hundred and three by one hundred and nine feet, is surrounded by casemates, which were used for barracks, messrooms, storerooms and a chapel. An inner room in the northeast corner of the structure, surrounded by thick walls, and with no direct opening to the outer light and air, was used as the magazine. Recent writers have called this the "dungeon," and have drawn highly imaginative pictures of the tortures inflicted therein by Spanish brutality. There is no foundation in any recorded historical facts for such imaginings.

From the court a stone ascent leads to the terreplein of the ramparts. At the outer angle of each bastion is a sentry box. The outer walls of the fort are nine feet thick at the base, four and a half feet thick at the top and rise twenty-five feet above the present level of the moat. The entire fort is surrounded by a moat, forty feet wide, which formerly could be flooded from the river at high tide. Along the outer edge of the moat are narrow covered ways and wider level spaces, called Places-of-Arms, where artillery was mounted and troops gathered under the protection of the outer wall or rampart.

The United States Government made some additions to the fortifications in 1842 and 1844. Fort Marion is one of the military reservations of the United States, and while the War Department has used it at intervals, particularly during the Seminole war, as a military prison, the place is now garrisoned by one non-commissioned officer, who serves as care-taker.

ENGLISH AND FRENCH INFLUENCES IN FLORIDA

1663-1821

The settlement of Virginia by the English was undertaken in 1607, and other colonies were planted along the Atlantic seaboard by the English and Dutch without opposition from the Spanish crown. Charles II granted the Charter of Carolina in 1663, and these settlements trenched upon the territory claimed by the Castilians. The establishment of these colonies was the signal for war that continued for a hundred years. England's power was augmented by the sturdy but lawless rovers, who even in that day were establishing Britain's power over the seas. Their frequent attacks upon vessels and their readiness to sack towns along the coast, were a constant menace, particularly to those that did not fly the British flag. Many such incursions were made upon the Spanish settlements and treasure vessels, and the pirates found refuge in the English settlements and ports of Carolina.

The raid of Sir Francis Drake upon St. Augustine, was that of a privateer, and the city was again made the victim of a similar attack in 1665. The Spaniards made frequent complaints to the English authorities of this lawlessness. The Carolinians, in turn, declared that the Spaniards were constantly inciting the Indians to attack the English settlements. It is entirely probable that both charges were quite within the bounds of truth.

LA SALLE'S EXPLORATIONS

It was in the latter part of the seventeenth century—1687— that De La Salle traversed the Mississippi river, from near its headwaters to the Gulf of Mexico. By this comparatively insignificant but successful expedition, which was made in a small fleet of frail canoes, he conferred upon France the right to appropriate the finest portion of the American continent, the great Valley of the Mississippi, and it

1572307

was this that gave the name of the French monarch to the new possessions, Louisiana.

This aggressive movement aroused Spain once more to the necessity of making good its claim to at least a part of the vast region which seemed about to pass under the dominion of the hated French. Pensacola was occupied in 1696, and a fortress was built upon the present site of Fort Barancas, and this was garrisoned by Spanish forces. Andres Arricola was appointed the first governor of the provinces. Some three years later D'Iberville arrived with a commission from Louis XIV of France, and established a colony on Dauphin Island, at the entrance to Mobile Bay. This was the first French colony in the South after the destruction of the Huguenots on the east coast of Florida in 1565, more than one hundred and thirty years before.

SPANISH POLICIES

The conditions existing in Florida at this time are thus summarized by Fairbanks in his History of Florida, (page 118): "At the beginning of the seventeenth century no European colony existed on the Atlantic coast of North America, except St. Augustine. In 1607, forty-two years after the founding of St. Augustine, Jamestown in Virginia, was settled by the English, and thirteen years later, in 1620, the Plymouth colony landed on the shores of New England. In the course of the next fifty years, settlements were made on the Atlantic coast by the French, English, Dutch and Swedish, and from the Gulf of St. Lawrence to Port Royal in South Carolina, flourishing settlements had been planted and a very considerable commerce had grown up under the fostering care of their respective governments.

"During the seventeenth century, Spain possessed by right of discovery and partial occupation, a claim to the most valuable portion of the American continent; but the history of this one hundred years is a record only of feeble and spasmodic efforts at colonization and timid exploration of the regions adjoining the military posts. Pensacola and St. Marks had been established as advanced and isolated posts, and a few others, but the history of Florida during this period presents but little more than a chronicle of the changes of governors and petty details of unimportant local events. Having the fertile valley of the Mississippi, the rich plains of Texas, the productive valleys and uplands of Alabama, Tennessee and Kentucky within their reach, no explorations had been made even into the gold fields of upper Georgia, no colonies planted, no empire founded, and in this magnificent and then vacant domain, the result of over one hundred years of Spanish domination was three small fortified towns and a few missions. It is, indeed, quite probable that in the year 1700 they knew less of the country than Menendez did within ten years after his arrival. The mines of Mexico and the riches of the Spanish Main had drawn the attention of the Spanish monarchy from the more enduring wealth and power to be derived from a fertile and populous region. The Spanish force of character, the spirit of adventure, the characteristics of such men as Cortez and De Soto, had departed, and the great Spanish monarchy, which at one time seemed to control the destiny of America, had sensibly declined both here and elsewhere."

ENGLAND AND SPAIN AT WAR

Until the latter part of the eighteenth century, when by treaty between England, Spain and France, in 1763, the peninsula of Florida was ceded to England, the entire territory was disturbed by conflict between the colonists and their various Indian allies. The growing jealousy between the Spanish in Florida and the English in Carolina, brought about many bloody conflicts. With the accession of Governor Moore of Carolina, the English opposition against the Spaniards became more aggressive. At the head of six hundred militia and as many Indian allies, he made an attack upon St. Augustine in 1702. He was unable to capture the fort, but he burned the town. In the same year the Spanish incited the Apalachee Indians to take the warpath against the English settlements in Carolina. They were opposed by the Creek tribes as the allies of the English, who defeated them with great slaughter.

Governor Moore in 1704, with a force of fifty mounted men and a thousand Creeks, began a campaign against the Spanish and their Apalachee allies in southwestern Georgia. He attacked them at various points, notably at Fort San Luis, near the present location of Tallahassee, with the result that many of the Indian settlements were wiped out and the Indian missions destroyed.

The increasing strength of the English in Carolina prompted an expedition by the Spanish and French combined in 1706, which resulted disastrously to the invaders. The English in 1708, under Colonel Barnwell of Carolina, made another incursion against the settlements of west and middle Florida, penetrating as far south as Lake Okeechobee. At the instigation of the Spanish, the Indian tribes on the borders of Carolina combined to raid the English settlements in 1714, but they were defeated and driven back into Florida.

FRENCH AGGRESSION

It was about this time that the French settlers who had spread along the Gulf and the banks of the lower Mississippi, became aggressive. The colony at Mobile was so near the Spanish garrison at Pensacola, that frequent collisions resulted. De Bienville, the French commander at Dauphin Island, fitted out an expedition in 1719 against Pensacola, which captured the outpost on Santa Rosa Island and eventually took possession of the fortifications at Pensacola itself. The Spanish shortly afterward recaptured the fort and made an aggressive campaign against the French settlements on Dauphin Island, but this was repulsed. In turn, the French determined to retake Pensacola, which they accomplished on September 18, 1719. Feeling themselves unable to hold the position, they destroyed Fort San Carlos and the public buildings and burned the town. Thus, within a period of three months Pensacola was three times assaulted and taken and then having been burned, the site was abandoned, as there was nothing left to be defended.

The harbor was reoccupied by the Spaniards in 1722 and the town was rebuilt on Santa Rosa Island. This location was occupied for forty years. Gradually the settlers began to plant on the northern side of the bay and in 1763 the site of Pensacola was laid out in its present location. The city may be said to date its existence from about the year 1750.

During this period the definition of the boundaries between Spanish Florida and English Carolina continued to be the cause of much friction. An attempt at arbitration in 1725 was fruitless. The Spanish Indian allies continued to harass the English settlements until, in 1727, Colonel Palmer, with a force of white volunteers and Indian allies, made a rapid descent upon the Florida colonists. Once more St. Augustine was attacked and burned, the inhabitants of the town fleeing for safety to the fort. This energetic action for a time put an end to attacks upon the English colonies and colonists.

SETTLEMENT OF GEORGIA

The English settlement of Carolina was begun at Port Royal in 1670, and at Charleston in the following year. The occupation of the country had not been extended south of the Savannah river, excepting for the erection of Fort George at the mouth of the Altamaha river. But in 1730 the colonization of the country between that stream and the

Savannah river was begun. This was not a great success, but it led in 1732 to the issue of letters patent for the colonization of the region under the name of Georgia. The southward movement of the English settlements led to further complications inspired by the Spanish. Governor Oglethorpe of Georgia received a summons from the Spanish governor at St. Augustine, requiring the surrender and immediate evacuation of all lands south of St. Helena Sound. Oglethorpe declined to obey and prepared to resist Spanish invasion, which he felt sure would follow. From England he received reinforcements of a regiment of regulars and large financial backing. The Spanish garrison at St. Augustine also was strengthened and both sides augumented their forces by alliances with the Indians.

Negotiations for a peaceful settlement of differences failed, and in October, 1739, Great Britain declared war upon Spain and sent a fleet to the West Indies to cooperate with Oglethorpe. He planned an aggressive campaign by land and sea against St. Augustine, the Spanish capital. Not until May of 1740, did he arrive at the mouth of the St. Johns river, some thirty-six miles north of St. Augustine. He continued his march toward that point and encamping on Anastasia Island, just beyond the reach of the guns at Fort San Marco, he awaited the expected arrival of the Carolina reinforcements and of the English frigates, which reached him in June. He planted his batteries on the island across from St. Augustine and began the siege. Shallow water over the bar prevented the ships from entering the river and their guns at this long distance were ineffective against the fort and town.

FRUITLESS SIEGE

The opposing forces, besiegers and besieged, were lined up against each other for forty days without serious injury to either, the Georgia commander hoping to force a surrender by cutting off the supplies for the garrison in the fort. But Monteano, the Spanish general, received word that provisions and ammunition had been landed for him by Spanish vessels at Mosquito Inlet, two days' journey south of Matanzas, and he managed to convoy them by a heavy guard overland to his soldiers. Oglethorpe then seeing that a hopeless task was before him, withdrew his forces, leaving the Spaniards unharmed, and from this time two years passed without aggressive operations on either side, although each was watching closely for an opening.

FORT MATANZAS

Fort Matanzas was built opposite the Matanzas Inlet, some twenty miles south of St. Augustine, by the Spanish Governor Monteano, whose administration extended a few years before and after 1740. But little mention is made of it in the records of those years, but it was constructed to oppose the invasion by sea of hostile forces during the period when Governor Oglethorpe of Georgia was active in his campaigns against Spanish Florida Its location is near where Menendez met and massacred the French Huguenots under Ribaut in 1565.

This fortification, although its original position was opposite the shallow inlet from the sea, is now nearly two thousand feet north of it, showing the peculiar tendency of unprotected openings from the ocean along the eastern coast of Florida, to move southward during the passage of the centuries. The action of the strong northeast winds and tides is to cut away the sand from the southern side of the inlet, and the northern side, less exposed to the direct influence of these winds and tides, is gradually filled, so that in the end substantially the same width of channel is preserved. Similar action has been noted in other localities along this coast and elsewhere.

Fort Matanzas, which is rarely visited by travelers in later times, on account of its inaccessibility, is one of the most venerable relics of the period of Spanish occupancy on this continent. It is slowly crumbling to ruin, and in 1912 an unsuccessful effort was made to secure Congressional appropriation for its restoration and maintenance.

The Spaniards were the first to move, and in 1742 Governor Monteano, at the head of five thousand troops and with a well equipped fleet, carried the war into the enemy's country. The campaign was short and decisive. Oglethorpe, with three vessels and six hundred men, but aided by a superior knowledge of the country, drove the invaders from his territory, inflicting heavy losses and suffering little himself.

In the following year Oglethorpe made a sudden descent upon Florida and again drove the Spanish colonists to take refuge in the fort at St. Augustine, but he failed to effect its capitulation. This ended the long series of fruitless hostilities and the British colonists, undisturbed for a time, increased in numbers and wealth. The garrison at St. Augustine was reduced to a small defensive force and in 1748 a treaty was concluded by England and Spain, which ended hostilities between their respective colonies in America for a number of years.

TREATY OF 1763

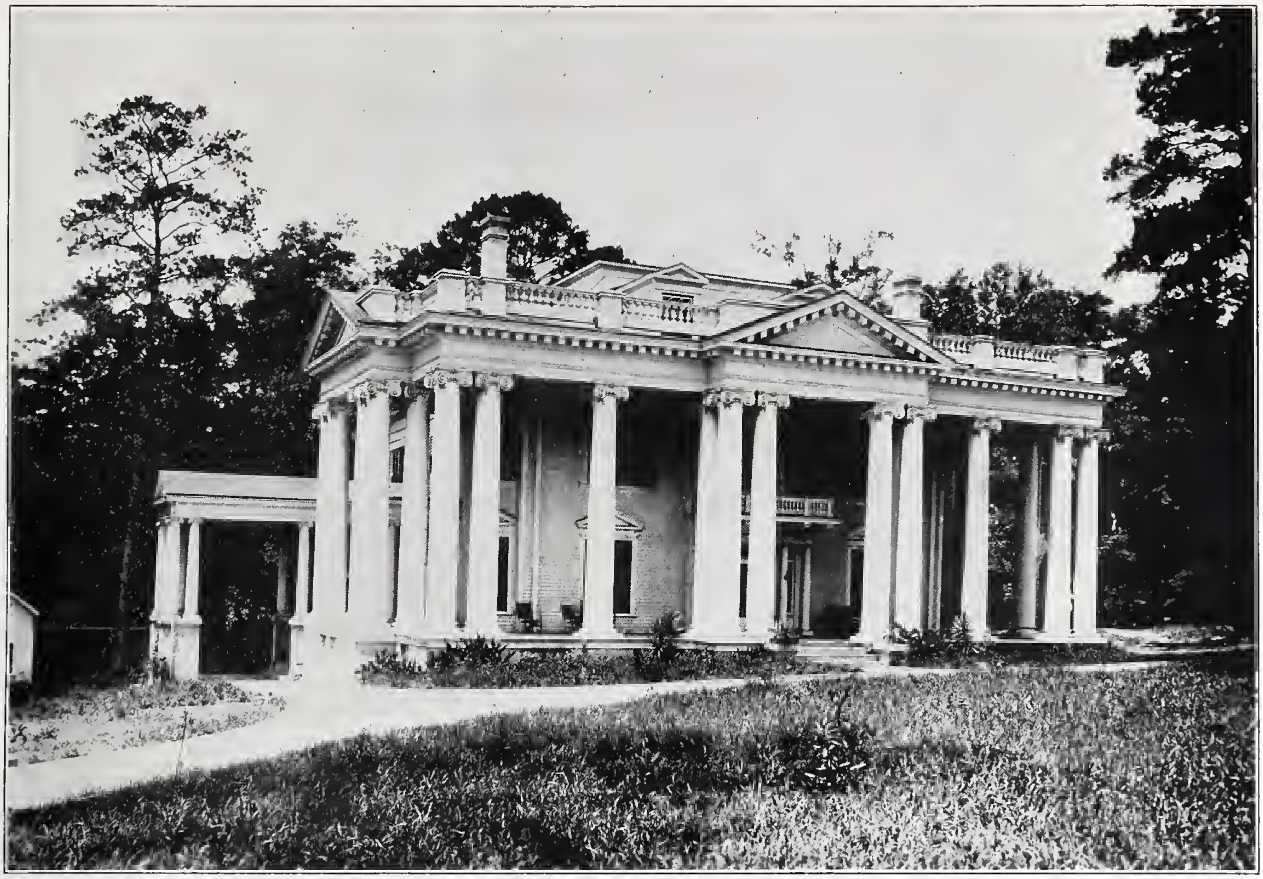
The progress of the French settlements in the West began to create uneasiness and a conflict of the commercial interests of the three nations most concerned, ripened into intense rivalry. Havana was captured by the English in 1762 upon the renewal of war between Great Britain and Spain, and this cut off St. Augustine and the Florida colonies from their source of supplies. England had long had an envious eye upon Florida, in order that she might enlarge her colonial boundaries. The possession of Havana and Cuba seemed to open the way by an exchange of the Cuban capital for Florida and the Bahamas. The trade was effected by the treaty of February, 1763, between Spain, France and England, by which the Floridas were ceded to England and Havana was returned to the Spanish crown.

The change of flags was most distasteful to the Spanish population of Florida, and although under the treaty, they were given entire and complete religious freedom, many of them left the country, going to Mexico and the West Indies. So universal was this desertion of the country and so great was the hatred of England, that only five Spanish citizens remained in St. Augustine, and, but for the efforts of the commanding officer, every building in the town would have been burned rather than let it pass into the hands of the English.

At this time the Spanish flag had floated over St. Augustine for one hundred and ninety years. Within that period the French had made settlements from the St. Lawrence westward, along the Great Lakes, along the Ohio and on both sides of the Mississippi from the Falls of St. Anthony to the Gulf. The English had occupied the entire Atlantic coast with their colonies, which now numbered about three million people. At this time the Spanish controlled but little more territory than at the beginning of their occupation of the country, and the entire population of Florida hardly exceeded seven thousand inhabitants, who were gathered principally at St. Augustine and Pensacola.

ENGLISH OCCUPATION OF FLORIDA

The English divided the territory into four separate governments, known as the Provinces of East Florida, West Florida, Quebec and Granada. The further history of Florida has to do only with the first



OFFICIAL RESIDENCE OF THE GOVERNOR AT TALLAHASSEE

ST. JOHNS BLUFF—OF GREAT INTEREST IN FLORIDA'S HISTORY

two named. The boundaries of East Florida were made, the Gulf of Mexico and the Apalachicola river on the west, as far north as a line drawn from the confluence of the Chattahoochee and the Flint rivers, thence east to the source of the St. Mary's river and thence with the course of that stream to the Atlantic Ocean; thence southward, including all islands within six leagues of the shore. These lines today form the boundary of all that part of Florida that lies east of the Apalachicola river.

The Province of West Florida was bounded on the south by the Gulf of Mexico from the Apalachicola to Lake Ponchartrain; on the west by the same lake, Lake Maurepos and the Mississippi river; on the north from that river to the Apalachicola along the line of thirty-one degrees, north latitude, and on the east by the Apalachicola river. Thus, it will be noted that the Florida of 1763 embraced all the present territory of that name, besides all the Gulf coast of Alabama, Mississippi and a part of Louisiana.

In marked contrast to Spanish methods, the English governors of the provinces appointed by the crown were directed to establish representative governments, summoning general assemblies with power to make laws for their protection and welfare, agreeable to the laws of the mother country. They were, within certain restrictions, empowered to establish courts.

With the purpose of securing speedy settlement of the territory, the English governors were given authority to make free grants of land to military officers and soldiers who had served in the wars of Florida, and to privates who had been disbanded in America. These grants were to be proportioned to the rank of the applicant. A field officer was given five thousand acres; a captain, three thousand; a staff officer, two thousand; every non-commissioned officer, two hundred, and every private, fifty acres.

James Grant was appointed the first English governor of East Florida in 1763. He established the capital at St. Augustine and began at once, a campaign of publicity, calling the attention of the world to the advantages of the soil and climate of his province. He was undoubtedly the first practical advertiser of Florida's agricultural possibilities and resources. The result was a large influx of white settlers and of negro slaves.

Commodore George Johnston, of the British navy, was made the first governor of West Florida, and he came to Pensacola in 1764. The question of good roads came up for early settlement and their importance was quickly appreciated in the development of the country.

The construction of a highway, which eventually connected the capitals of the two provinces, was undertaken, and to it was given the name of the King's Road. Its cost was met by subscription, to which Governor Grant and other wealthy citizens were liberal contributors. This road is still in use and it is still known as the King's Road in several of the northern Florida counties through which it passes, although its original sand surface has been much improved by modern engineering in some localities.

TURNBULL COLONY

Among the early colonization propositions, the first of large importance of which record has been kept, was that backed by English capitalists, under the leadership of Dr. Andrew Turnbull, a Scotchman of some wealth. At an expense of one hundred and sixty thousand dollars, he and his associates recruited from Smyrna, the islands of the Mediterranean, Italy, and the Island of Minorca, fifteen hundred people and settled them on a tract of several thousand acres near Mosquito Inlet, on the eastern side of the state. To the settlement they gave the name New Smyrna, and this attaches to the locality today.

The colonists were under indentures by which in consideration of the sums paid for their passage and support, they were to labor for their employers without wages for a specified number of years, after which they were to receive allotments of land in proportion to the size of their respective families.

The location was well chosen, among natural conditions closely resembling those from which the settlers had come. Much labor was expended in building roads, opening canals for drainage and transportation, and for other improvements which remain and are in use today. Special attention was given to the cultivation of indigo and sugar cane, but various other crops were raised successfully. The colony was prosperous, but within a few years complaints were made of the injustice and hardships inflicted by the managers, who appear to have reduced the tenants to a pitiable condition. A revolt of the laborers brought more severe restrictions and the execution of the leaders. These complaints were brought to the ears of the attorney general and the governor at St.Augustine. Proceedings were begun in the English courts there to cancel the indentures and the colonists were released from their contract obligations.

The original colony had been reduced by death and suffering to about six hundred persons, men, women, and children, and the survivors were brought to St. Augustine where they were given allotments for homes in that section of the city north of the fort, where their descendants remain to the present time. These immigrants were known as Minoreans and the name still belongs to the remnant of the race.

The Turnbull colony was established in Florida in 1767 and it was dissolved nine years later. It appears financially to have been a total loss, for it was abandoned before it could have become largely profitable. The cause of its failure can only be conjectured, but the uncertain and conflicting reports of history appear to relieve Dr. Turnbull of much of the direct blame, for it is handed down that the cruelties which resulted in the disbandment of the colony were inflicted by his overseers without his knowledge and during his absences from the place.

Governor Grant resigned his position in 1771 and was succeeded by Lieutenant-Governor Moultrie, and he by Patrick Tonyn in 1774.

Governor Johnston in West Florida was replaced in 1766 by Montacute Brown, who was followed by Peter Chester in 1772. Under the administrations of these executives the provinces flourished and many settlers were attracted from Carolina and from Europe.

THE REVOLUTIONARY WAR

The revolt of the American colonies from British rule in 1776 and the signing of the Declaration of Independence, marked the beginning of new troubles for the Florida provinces. East Florida soon became a rendezvous for the royalists and a base for English operations against the rebellious colonies. From Georgia and Carolina came more than seven thousand colonists who had remained loyal to the mother country. Military operations of greater or less magnitude were threatened between the United States and the British possessions, which were separated only by the arbitrary boundaries between the two sections. An expected attack by American forces along the east coast of Florida, was prepared for by the erection of fortifications on St. Johns Bluff, near the mouth of the river of that name. on the same site that had been the scene of the Fort Caroline massacre and of the retaliation by De Gourges. However, no clash of arms occurred at this point during the War for Independence.

Great Britain was too much occupied with her operations in the North to offer or afford much aid to her colonists along the South

Atlantic seaboard. During and previous to this period, foreign commerce with these southern ports grew to considerable proportions, and the ports of St. Augustine, Fernandina and Pensacola became important.

Taking advantage of England's preoccupation with the American colonies, Spain improved the opportunity in 1781, to attack and capture Pensacola and with it the Province of West Florida. These operations were begun under De Galvez, the Spanish governor of Louisiana, who two years before had captured the English post at Baton Rouge. The loss of these posts and of the Province of West Florida, was in part compensated by the capture of the Bahamas under Colonel Devereux, with an expedition that had been outfitted at St. Augustine.

SPAIN RE-OCCUPIES FLORIDA

At the close of the American Revolution, the English government having acknowledged the independence of the colonies, concluded that the Florida provinces had little value to it and it proposed to recede these possessions and the Island of Minorca in the Mediterranean, in exchange for the Bahamas. This was accomplished by the treaty of September 3, 1781, between England and Spain, by which the latter assumed control and sovereignty over the Floridas.

The change of flags was hardly less than a disaster to the English colonists in the ceded territory. Some of them returned to England, others went to Nova Scotia and the Bahamas. Many of them moved with their slaves to Jamaica and others returned to Georgia and the Carolinas, now a part of the United States. Fine estates along the Atlantic coast and up and down the St. Johns river, abandoned by their English proprietors, soon fell into decay and ruin.

Only an insignificant migration of Spaniards to Florida followed its recession to their government, although the Spanish governor offered large inducements in the way of land grants as rewards for civil or military service.

Negotiations between Spain and France in 1795 resulted in the cession of all that part of West Florida lying west of the Perdido river, thus establishing for the first time the boundaries which mark the present limits of the Peninsular State.

LOUISIANA PURCHASE

France, in 1803, after holding possessions in North America for two hundred and thirty years, withdrew from the last of these possessions by ceding the Territory of Louisiana to the United States for a consideration of fifteen million dollars. Upon the conclusion of the Louisiana Purchase, the United States enclosed Spanish territory on the American continent within narrow limits.

Difficulties between the United States and England again assumed a serious phase in 1811. The latter government was suspected of plans to seize Florida, in order to secure a frontier along the southern border of the United States. The matter was considered of sufficient importance to be brought to the attention of the Continental Congress, which in secret session directed the President to anticipate any attempt of England by occupying the Florida territory with military forces.

The President appointed a commission to confer with the Spanish government to secure the temporary cession of Florida to the United States, but this the Castilians refused to make. A considerable number of persons who feared the seizure of Florida by the United States, met at St. Mary's, Georgia, and organized as Patriots, seeking to establish a republican government in Florida. A provisional government was formed, on paper, and officers were elected, but while this movement as a government never came to power, the Patriots became an aggressive and belligerent rallying center for many years.

Fernandina had become by 1812 an important port. It was protected by a small garrison in Fort Clinch. Under the pretext of protecting American interests, a fleet of nine gunboats entered the harbor and after a brief resistance, the American flag was raised over the fort. Securing an alliance with the Patriots, the United States forces marched upon St. Augustine, but were driven back toward the St. Johns river by the Spanish garrison. The Spanish minister at Washington remonstrated against this violation of treaty obligations, and the British minister entered his protest. The president in apology declared that the invading forces had far transcended their instructions and he expressed his sincere regrets at the mistake. General Matthews, who had commanded the invasion, was relieved and Governor Mitchell of Georgia, was appointed in his place. The President then finding that Congress was unwilling to undertake a war with Spain, ordered the United States troops withdrawn from Florida.

INDIAN AGGRESSIONS

The Indians under Chiefs Payne and Bowlegs had begun a predatory warfare upon the settlements in Florida and southern Georgia in 1811. They were resisted by volunteer forces under Colonel Newnan of Georgia. A condition of anarchy continued for eighteen months; plantations were destroyed, slaves were carried away and property ruined under the immunity afforded by the flag of the United States or by the neglect of the government to stop the outrages.

The War of 1812, between the United States and England involved Florida once more. A British fleet entered the harbor of Pensacola and with the consent of the Spanish governor landed troops. The British flag was raised over the forts and the Indians of that region were incited to carry on hostilities against the settlers in Georgia. They were armed with British guns and ammunition and were promised liberal bounties for their attacks.

General Andrew Jackson was sent by the United States Government in 1814, to put an end to these depredations upon Americans. With a body of regulars he marched against Pensacola and stormed the town. He drove the British forces from Forts St. Michel and Barancas, and occupied the city. He then marched with his forces to New Orleans.

At the instigation of the British officers who had been dislodged by General Jackson, runaway negroes and Indians were encouraged to continue their depredations upon the American settlements. These lawless forces became increasingly bold and again General Jackson came to the rescue. His second visit to the section was in 1818. Making a treaty with the Creek Indians to attack and repel the renegade Seminoles, he made a vigorous campaign against them in January of that year. Quickly he destroyed the Miccosukee and Fowl towns. He attacked Fort St. Marks, which promptly surrendered. The village of Old Town, on the Suwanee river, was the next to fall before his onward march. Here he encountered a large body of Indians whom he scattered, besides capturing many prisoners. Among the captives were two Englishmen, Arbuthnot and Ambrister, whom he charged with being the chief agents in supplying the Indians with arms and directing their expeditions against the whites. They were tried by court martial, found guilty as charged and executed, one by hanging and the other being shot.

Learning that the Spanish authorities at Pensacola were furnishing the Indians with arms, General Jackson marched against that place for the second time. It was quickly capitulated, the governor and many of his troops having fled to Fort Barancas. General Jackson established a provisional government over West Florida, with Colonel King as civil and military governor. This government was continued fourteen months, when Pensacola was restored to Spanish authority in September, 1819.

FLORIDA AS PART OF THE UNITED STATES

1821-1912

A treaty was negotiated between Spain and the United States in February, 1819, whereby Florida became a territory of the American government. This treaty for the cession of the Floridas to the United States, which involved a consideration of five million dollars, was ratified February 19, 1821. The change of flags took place at St. Augustine, July 16, 1821, and at Pensacola on the twenty-first of the same month.

Upon this final change of flags the administration of Florida's civil affairs devolved upon the military authorities until the passage of the Act of Congress of March 3, 1822, established a territorial government. It was provided that this government should be administered by a governor appointed by the president, who was also to name all local officials, a legislative council of thirteen, to be named annually by the same authority, and two superior courts.

General Jackson was the military governor of Florida until the formation of the territorial government in June, 1822, when Governor William P. Duval was appointed. The first legislative council was convened at Pensacola and the old provincial divisions were merged into counties. Escambia and Jackson counties were created from the former province of West Florida, and St. Johns and Duval from East Florida.

General Joseph M. Hernandez was chosen the first territorial delegate to Congress. He was succeeded by Colonel Joseph M. White, who occupied the position for many years. Charles Downing followed him until 1841, when David Levy (afterward changed to Yulee) was selected and continued to hold the position until the admission of Florida as a state into the Union.

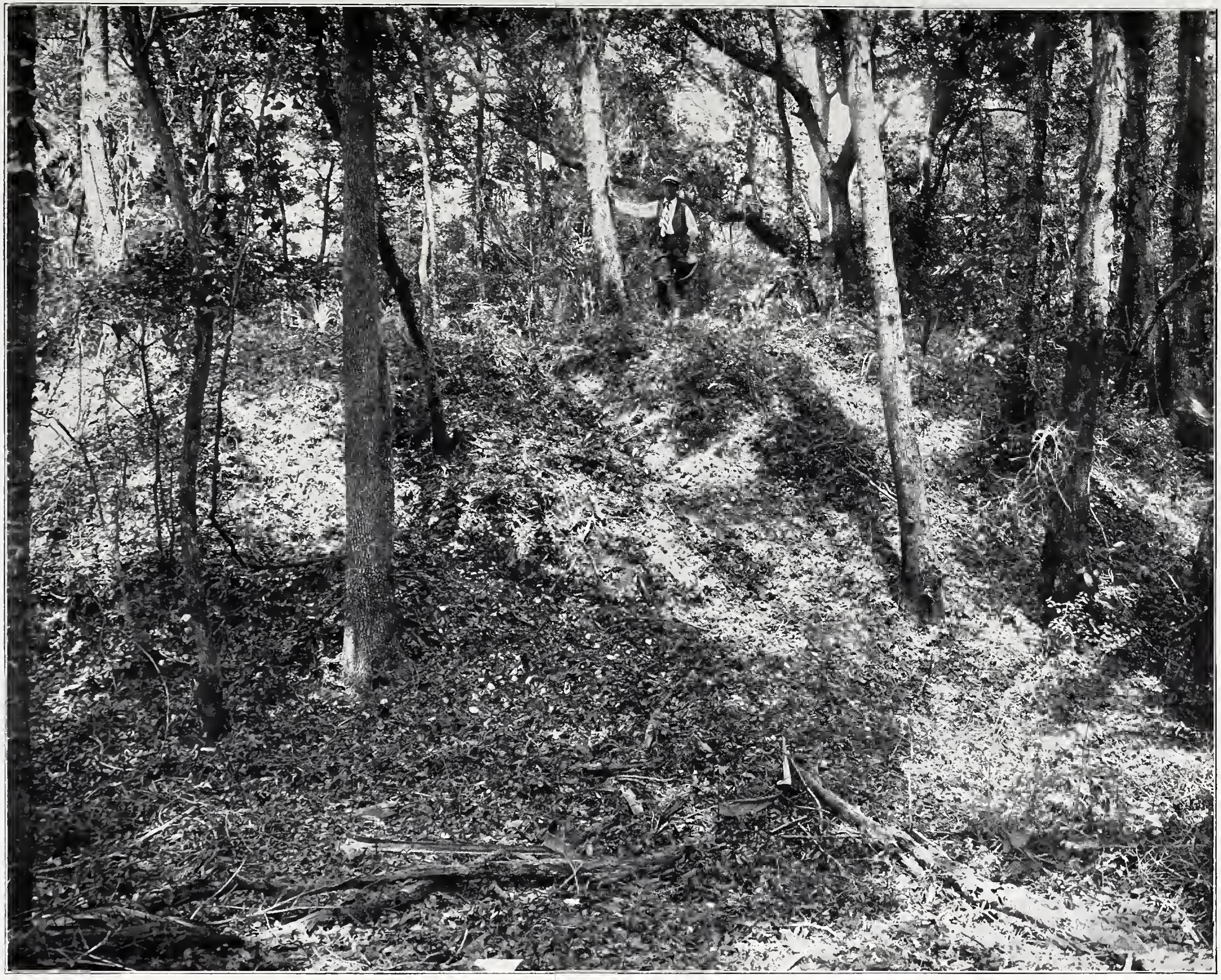
BUILDING OF TALLAHASSEE

The second session of the legislative council was held at St. Augustine in June, 1823. It named a commission to select a location for a permanent seat of government. Its choice was a beautiful hill near the old fields of the Tallahassees, in the center of the Fowl towns and but two miles from the site of old Fort San Luis. Here a new city, the present capital of the state, was laid out and received its name from the historical associations. The first house was built in 1824 and the capitol building was commenced in the same year, although it was not completed for many years thereafter.

This location had the disadvantage, which has become greater with the development of the state, of being far removed from the geographical and the later industrial center of Florida. It is probable that in making this selection the original commission could not have foreseen the possibility of the great industrial development that has come in the central and southern parts of the peninsula. Although several times the suggestion has been made that the seat of the state government should be removed to a more central location, it has never progressed beyond the initiative stage.

The location of the capital placed it in a section still occupied by Indian tribes who were inclined to dispute the rights of white settlers. The Miccosukees were regarded as the original occupants of the country and the Seminoles were, as the name indicates, runaways from the Creeks and other tribes living along the Apalachicola river. Chiefs Payne and Bowlegs were the leaders of the two principal tribal organizations. The white settlers demanded that the Indians should be confined within narrower limits than had been allowed them, and a treaty was negotiated by which the Indians agreed to remove to the south of a line running east and west through what is now about the southern border of Alachua county.

The whites were still dissatisfied and insisted that all the tribes should be moved to some place beyond the Mississippi river, and that Florida should be forever rid of them. A delegation of chiefs accompanied the Indian agent to Arkansas, in accordance with the provisions of the treaty of Payne's Landing in 1832, to select a location, with the understanding that the tribes should be removed to the chosen location during the years 1834 and 1835. They were to receive a cash payment of fifteen thousand dollars and an annuity of three thousand dollars for the following ten years. The chiefs on their return expressed themselves satisfied with the arrangements and with the country they had investigated, but the younger chiefs had a strong following in their refusal to accept the terms and conditions that had been made. They declined to leave Florida and the infection spread rapidly through the tribes.



PRESENT DAY VIEW OF PRE-HISTORIC INDIAN BURIAL MOUND

THE SEMINOLE WAR

Measures were taken under the authority of the United States Government to enforce the removal to the West, and this led to increasing troubles, which developed into the Seminole war. This cost the government twenty millions of dollars and eight years of time. Twelve hundred and thirty officers and soldiers died in battle or from wounds and disease during this conflict, which for ferocity and savage butcheries has never been surpassed in the history of the United States. Incidental to this strife and to the inroads by the Indians which the government could not foresee or prevent, a mass of claims was piled up against the Federal Government which involved millions of dollars.

At the beginning of these troubles with the native tribes, the number of Indians in Florida was estimated at two thousand, including warriors, women, and children besides the negroes who had escaped from the plantations and had made their abode with the natives. That this was a serious underestimate became apparent later and led to entirely inadequate preparations for their subjugation.

Almost countless raids were made by the unruly red men; women and children were ruthlessly slaughtered, plantations laid waste, crops destroyed and buildings burned, until the industrial development of the state, from the Everglades to the northern and western boundaries was stopped. In many encounters the regular troops, unfamiliar with savage methods of warfare, were defeated. By ambuscade the Indians massacred detached commands and committed horrible indignities upon the bodies of their dead foes. The most notable of these treacherous slaughters was Dade's Massacre, which occurred near the present town of Bushnell in Sumter county, December 28, 1835. It aroused a feeling of horror in every part of the country and forced upon the Federal Government a realization of the serious task it had in dealing with the Florida Indians.

DADE'S MASSACRE

It was brought about when Major Francis L. Dade, Fourth Infantry, U. S. A., was ordered with his command from his station at Key West to reinforce the post at Fort King. Marching from Tampa, where he had come by boat, he had one company of infantry and two companies of artillery, the force under his command numbering eight officers and one hundred privates. Crossing the Hillsborough and Withlacoochee rivers, the little force proceeded in open formation through several miles of prairie country, the road being bordered by low growing palmetto scrub. Behind these lurked one hundred and eighty Indians under Chief Micanopy. At a signal from the red warriors poured forth a volley of rifle fire, each selecting his particular victim. Half of Major Dade's command fell at the first round of fire and the slaughter was continued by the merciless savages until the last soldier had fallen, wounded or dead. So sudden had been the onslaught that effective resistance was impossible. The horrible work of the Indians was completed by a band of renegade negroes, who came upon the scene and beat to death every soldier who showed signs of life.

From this bloody field one private escaped to Tampa and told the story. General Duncan L. Clinch was in command of the United States troops in Florida until 1836, when General Winfield Scott assumed command in person. During this period the depredations of the Indians were frequent and bold all over the state, but especially in the section west and southwest from the present location of Jacksonville, and in western Florida along the banks of the Apalachicola river.

General Scott's campaign was practically fruitless and upon General R. K. Call of Florida, devolved the command of the regular and volunteer forces in the field. In November of the same year, 1836, General Thomas Jesup relieved him in command. He had eight thousand troops at his disposal. He organized a campaign and pushed operations against the Indians southward toward the Everglades, then the stronghold of the native tribes. He accomplished more by his aggressive and relentless methods than had been done by any or all of the preceding commanders.

MILITARY COMMANDERS

General Zachary Taylor succeeded him in May, 1837, and he continued the policy of keeping the Indians on the defensive. General Taylor asked to be relieved early in 1840 and General Armistead was assigned to the command.

Depredations and slaughter were continued by the savage warriors and the efforts of the regular troops seemed entirely insufficient to stop or even to check them. Some particularly horrible outrages aroused the nation once more to a general demand that the war should be ended promptly and at whatever cost. Congress appropriated one million dollars and the War Department was directed to prosecute the war without relaxation or parleying.

Some of the more prominent of the hostile Indian chiefs who had part in this war, were Osceola, Billy Bowlegs, Coacoochee, King Philip, Halleck-Trustenuggee, Hospertorkee, Shiver and Shakes, Tiger Tail and Octiarche, names that are closely allied with the history of the state and which succeeding decades have invested with a sentimental heroism hardly warranted by their acts.

Colonel, afterward General, W. J. Worth was placed in command of the forces in Florida in 1841, he being the eighth general officer sent by the Federal War Department to end the war. His task was an uninviting one, for as the Indians had been reduced in numbers by capture and in battle, they had divided into small bands and leaving their women and children in the fastnesses of the Everglades, they had scattered and were ravaging the state from one end to the other. Life and property were safe nowhere; agriculture and industry had been stopped. In the face of such conditions General Worth issued the order: "Find the enemy. Capture or exterminate."

SEMINOLE WAR ENDED

As the Indians had been captured during this war they had been sent to the selected location in Arkansas. Chief Coacoochee was among the captives. He had been started on the journey toward the West when General Worth directed that he be brought back. In irons he appeared before the American commander on the deck of the vessel that had brought him. He was told that unless his people should come in and surrender unconditionally within forty days, he would be hanged from the yardarm of the ship. He was not permitted to go to them himself, but he selected his own messengers to carry the word. Well within the appointed time some two hundred of the tribe came in and the wily chief and his band were eliminated forever from the history of Florida by their deportation to the West.

Others followed, but a considerable number of Indians remained in and about the Everglades under Bowlegs and Arpeika. An expedition was sent against them which scattered the roving bands and burned their villages and supplies. As late as December, 1841, a raid was made by the Indians on Mandarin, a white settlement on the St. Johns river twelve miles from Jacksonville. Five persons were killed but the marauders escaped without harm.

After a careful survey of conditions in Florida and after having pushed the larger part of the remaining natives still unconquered into the Everglades, General Worth informed the War Department in

February, 1842, that to the best of his knowledge and belief about three hundred of the natives were left in the state, and of these, only one hundred and twelve were fighting men. He advised that they be allowed to remain unmolested in the section south of Peace creek, a stream that empties into Charlotte Harbor in De Soto county, on the lower west coast. This was ordered by President Tyler in May, 1842, and the war was officially declared to be at an end.

Subsequent outbreaks of less importance occurred along the lower Indian river in 1849, and in the southern part of the state in 1857, but these were quickly quieted by state troops without severe loss of life or property.

But the closing of this war did not bring into the territory the influx of population that had been expected and hoped. The population of Florida in 1830, after having been for ten years a part of the United States, was only 34,730. It had increased in 1840 to 54,477, notwithstanding the prevalence of the Seminole war.

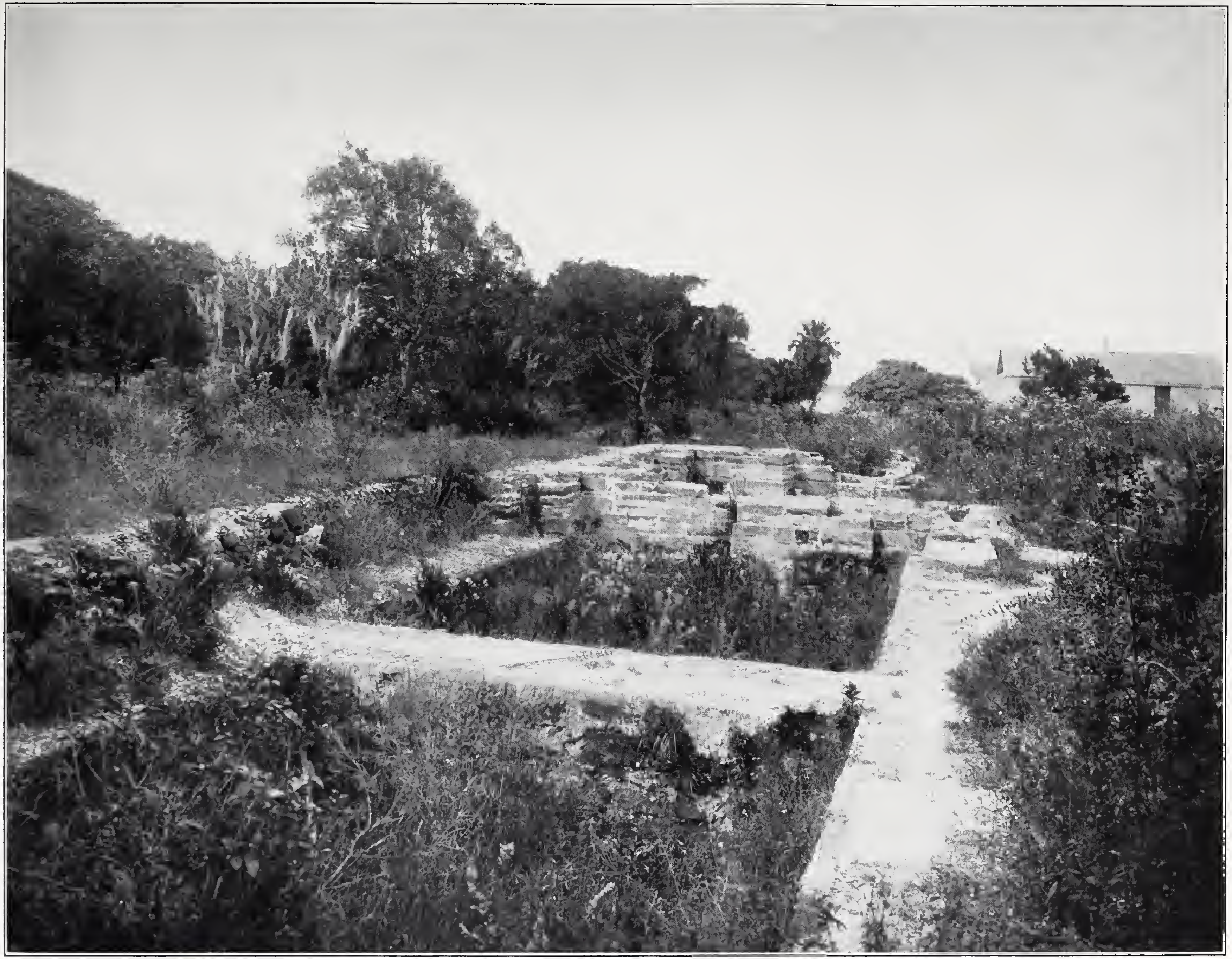
FLORIDA ADMITTED TO STATEHOOD

A movement to secure the admission of Florida to the Union as a state was begun in 1838, and a constitutional convention was assembled late in that year. The continuance of the Indian wars at that time, however, postponed further action until 1845. The policy of the Federal Congress had been to maintain the equilibrium of political power in the United States Senate by admitting new states, northern and southern, together, and accordingly Florida and Iowa were admitted by concurrent acts of Congress on March 3, 1845.

A supplemental act of the same date gave to Florida a grant of eight entire sections of land whereon to establish a seat of government; also the sixteenth section in every township, or its equivalent, for the support of public schools, and two townships for establishing two seminaries of learning, one to be located east and the other west of the Suwanee river; also five hundred thousand acres for internal improvements, besides five per cent of the net proceeds from the sale of public lands, the same to be applied for the purposes of education.

William D. Mosely was the first governor of Florida, chosen under the new constitution. Tallahassee, which had been the territorial capital, was continued as the seat of the state government, and the first Legislature was convened there in June, 1845.

Prior to the year 1855 not a mile of railroad had been built in the state, but encouraged by the liberal land grants by the Federal Government, a project of internal improvements, to be fostered by the



BELIEVED TO BE FOUNDATIONS OF "CASTLE" OCCUPIED BY DR. ANDREW TURNBULL AT NEW SMYRNA

construction of railroads, was set on foot largely by the foresight of United States Senator David Yulee. The state lands were placed under the control of an Internal Improvement Board, which was authorized to guarantee interest on bonds that might be issued for the construction of railroads between Fernandina and Cedar Key, and from Jacksonville to Tallahassee. These roads and some others were completed about 1860. They gave a great impulse to the development of the sections through which they passed and the settlement of Columbia, Alachua and Marion counties was particularly benefited.

CIVIL WAR AND RECONSTRUCTION PERIOD

1861-1876

Political unrest prevailed all through the South during the three or four years that preceded the war between the states, and of this Florida had its full share. The Florida Legislature in regular session, in November, 1860, provided for a convention of the people of the state, which met at Tallahassee in January of the following year, and on the tenth day of that month, an ordinance of secession was adopted by a vote of sixty-two to seven. It declared the State of Florida to be a sovereign and independent nation, and it rescinded all ordinances that recognized the union with the United States. Florida's representatives in both branches of Congress withdrew from that body. Federal judges and other United States officials in the state resigned, excepting those at Key West.

South Carolina had passed an ordinance of secession on December 20, 1860. Mississippi followed on January 9, and Florida was thus the third state to take this decisive action.

Fort Marion at St. Augustine, Fort Clinch at Fernandina and the United States arsenal at Chattahoochee were seized by state authority. Governor Perry ordered the seizure of the navy yard and fort at Pensacola, but at that time Fort Pickens was held by Federal forces. The Confederates occupied Fort Barancas and the navy yard, and this situation continued until October. Then an artillery battle took place between the opposing forces, but the conditions were not changed.

Fort Clinch was held by a small Confederate force and was easily taken by General Dupont, March 9, 1862, and from this time Fernandina remained in possession of the Union forces until the close of the war.

St. Augustine was surrendered to Commodore Rogers, March 11, 1862, and was held by Federal arms until the war ended. Pensacola was evacuated by the Confederate forces in May, 1862. When they left they removed all accumulated stores and burned the principal lumber mills in the vicinity.

Federal gunboats blockaded both coasts of the state more or less persistently, with the result that several skirmishes took place which brought no serious damage to either side. The Confederate battery at Tampa was attacked, but it remained in possession of the Southern forces.

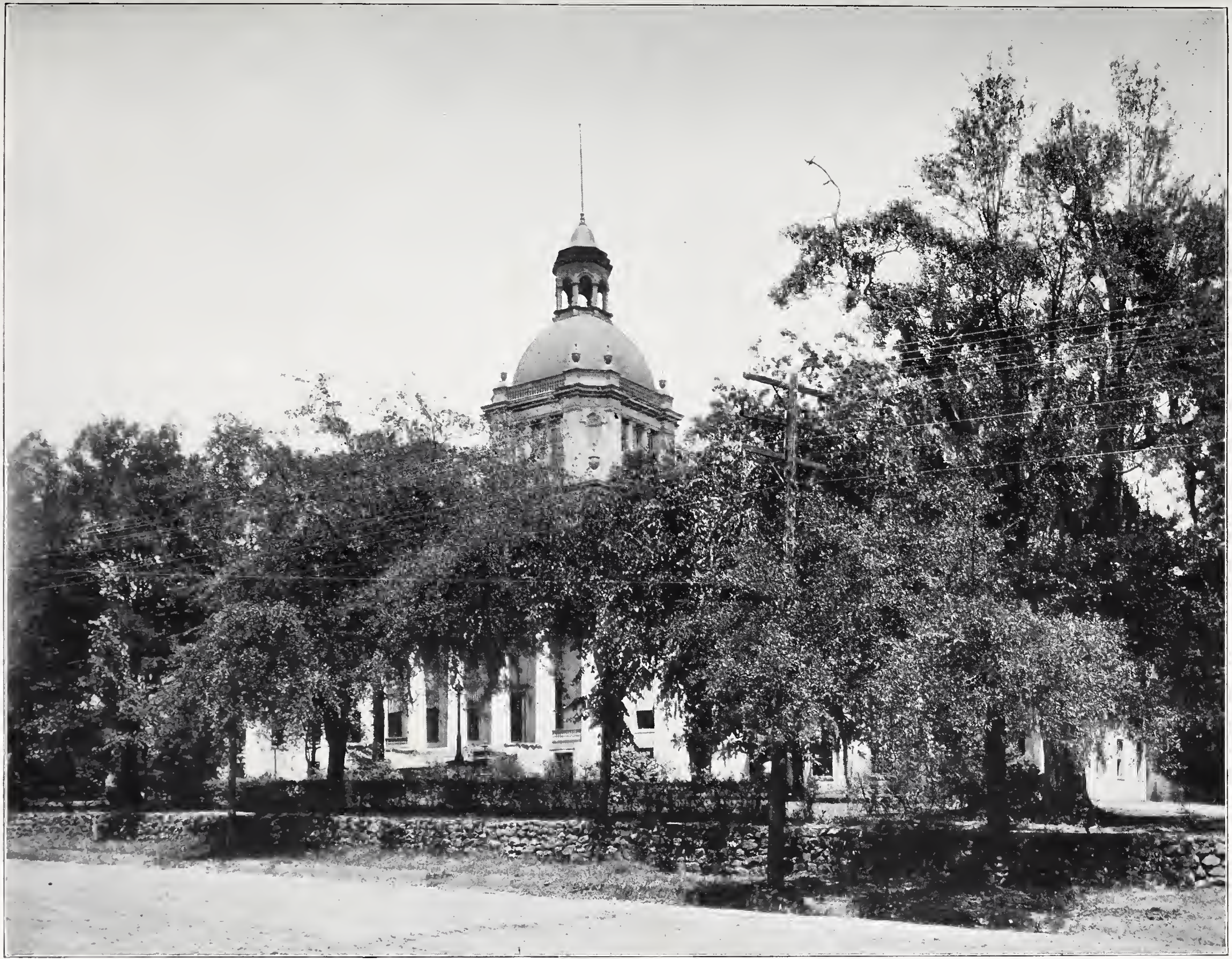
DEFENSE OF JACKSONVILLE

St. Johns Bluff, the scene of the Fort Caroline massacre, was again fortified for the defense of Jacksonville. Heavy batteries were placed by Capt. Thomas Ellwood Buekman, who was in command of the defense of the city. The strength of the position which commands the approach from the ocean, made its reduction important, even necessary, for Federal military operations in the state. Consequently, a heavy detachment of Federal war vessels and troops was sent against it. The troops were landed below the fort and by a strong flank movement the Confederate defense was compelled to retire. General Brannon commanded the invading forces and occupied Jacksonville, but for a short time only, in October, 1862. General Joseph Finegan was in command of the defense of Florida, having a force of about seventeen hundred fighting men, mostly cavalry.

Early in 1863 the plan to reoccupy Jacksonville and make it the rendezvous and asylum for negroes from this part of the South, received the approval of President Lincoln. Colonel Higginson and Colonel Montgomery commanding an expedition of colored troops, took possession of the city. General Finegan with a much smaller force, closely surrounded Jacksonville and was successful in a number of sharp skirmishes. Colonel Montgomery led a raid that sacked the plantations along the St. Johns river as far south as Palatka, but in attempting to land there, he was repulsed and compelled to retire.

General Hunter ordered that Jacksonville be evacuated March 27, 1863, after an occupation of seventen days, and this, for a time at least, set aside Lincoln's plan to reeover Florida to the Union.

With the exception of the fighting at Pensacola in 1861, the military operations in the state prior to 1864, were unimportant. Fernandina, St. Augustine, Key West and Pensacola were occupied



FLORIDA'S STATE CAPITOL BEGUN IN 1824, BUT NOT COMPLETED FOR MANY YEARS
Seat of present State Government at Tallahassee

continuously by Federal garrisons which, with rare exceptions, made no offensive or aggressive movements.

CAMPAIGN AGAINST FLORIDA

But Florida was the source of a large portion of the supplies for the Confederate armies in other fields, especially in furnishing beef and salt. It became an important part of the Federal plans, therefore, that this source of supplies should be cut off from the Southern fighting forces. President Lincoln had been led to believe that a strong Union sentiment existed in the state, which needed only the proper recognition and assistance to assert itself. General Gillmore, who commanded the Federal troops in the southeast, entertained similar ideas. In carrying out this campaign for the reunion of Florida with the United States, General Gillmore planned to occupy the state with a large force, to cut off the Confederate sources of supplies, to enlist negroes in large numbers, and finally to inaugurate measures to bring Florida back into the Union.

Several regiments of infantry, a few of them negro troops, a mounted brigade and several batteries were landed at Jacksonville, February 7, 1864. From this point an advance was made toward the west. Baldwin, Pickett's, Sanderson and other Confederate points were taken and the Federal forces proceeded toward Lake City as the objective point. General Finegan was in personal command of the opposing forces which harassed in frequent skirmishes the advancing Unionists. Gainesville was taken and fortified by the Northern forces on March 13. For several days the two armies maneuvered without coming into close touch, but they finally clashed in a skirmish which developed into the Battle of Olustee, one of the bloodiest encounters of the entire war, when the number of troops engaged is taken into consideration. It was important, as well, in the general results that followed.

BATTLE OF OLUSTEE

General Finegan's force of two thousand men had been reinforced by the timely arrival of regulars from Georgia, augmenting his command to forty-six hundred men and twelve heavy guns. General Seymour, with nearly six thousand troops, after three hours of hard fighting was compelled to retreat, and he retired with his command to Jacksonville. The losses in this battle, as officially reported, were, on the Federal side, eighteen hundred and sixty-one killed and wounded, and on the Confederate, nine hundred and forty killed, wounded and missing.

The Battle of Olustee was decisive in that it put an end to any expectation of restoring Florida to the Union at that time or of separating it from other Southern states. It was also the last important engagement of the Civil war within the limits of the state. Federal forces occupied Palatka for about thirty days early in 1864. Tampa was captured and held for a short time in May of that year, and numerous skirmishes took place between the opposing forces, especially along the St. Johns river and in the southwestern part of the state, but in April a large portion of the Federal forces were withdrawn from the eastern side of the state, and soon thereafter most of the Confederate troops, which had been needed for home defense, were sent to reinforce the armies in Virginia and Tennessee.

Capt. J. J. Dickison achieved much distinction in 1864 and early in 1865 by his gallant defensive and aggressive operations against the Federal forces remaining in the state.

Florida furnished, in proportion to its population, more troops to the Confederacy than any other state; twelve regiments of infantry, two regiments and one battalion of cavalry, and four light batteries came from the Peninsular state. They were represented in nearly every important engagement during the war and made splendid records on every battle field.

Florida was also well represented in the higher ranks of the Confederate armies. Gen. E. Kirby Smith, Maj.-Gen. W. W. Loring, Brig.-Gens. M. L. Smith, J. Patton Anderson, Joseph Finegan, J. J. Finley, W. G. M. Davis, E. A. Perry and J. J. Dickison were among the officers who achieved distinction.

FLORIDA'S RETURN TO THE UNION

The Confederate forces in Florida made formal surrender to General McCook May 20, 1865. President Johnson appointed Judge William Marvin the provisional governor of the state in July, and in August he issued a call for an election of delegates to a constitutional convention, to be held in October. An amnesty oath was required as a qualification to vote at this election, and this oath was taken by seven thousand and forty-two persons in the entire state. Fifty-six delegates were chosen: the convention repealed the Ordinance of Secession and adopted a new constitution.

This instrument provided for the election in November of a Governor, cabinet officers, a legislature, county officers and Congressional representatives. The entire vote cast at the election was less than four thousand. Davis S. Walker was elected Governor and took his office on December 20th.

The functions of the state government were resumed during the following year, and citizens returned to their ordinary occupations. The Legislature met in December, 1866, and refused to ratify the Fourteenth Amendment to the Federal Constitution, on the ground that it virtually disfranchised the most intelligent classes in the south.

The Reconstruction Law of 1867, passed over the President's veto, placed the southern states under the supreme military control of the United States. It practically disfranchised all who had served with the Confederate armies or who "had given aid to the enemies of the United States."

After the registration of all who were not debarred by these regulations, an election of delegates to another constitutional convention was ordered. This registration in Florida showed 11,148 white and 15,434 negro voters, but only about 14,500 votes were cast at the election, nearly all of them favoring the convention. Forty-five delegates were chosen and when they met, they immediately split into two factions. Each held its own convention and went through the forms of transacting the business for which it had been called. The two factions were then peremptorily summoned to gather at a time and place appointed, with General Sprague, the military commander of Florida who had been named by the President, as the presiding officer. The presiding officers of the two conventions were set aside and the belligerent members who manifested inclinations to obstruct the progress of the reunited convention, were unseated. The business was speedily transacted and the constitution of 1868 was adopted. This was ratified subsequently by popular vote with small opposition.

PERIOD OF RECONSTRUCTION

Backed by the military power of the Federal Government, the negroes in the hands of more or less unscrupulous advisers, were in practical control of the political situation in Florida. The Period of Reconstruction which followed the Civil war brought to the state, as to many other southern states, disaster almost, if not quite, as appalling as those of actual conflict. The south lost more than two and a half millions of its young men who should, and would, have been the rebuilders of its wasted fortunes. Discouraged by the economic and social conditions forced upon them by the mistaken policies of the Federal Government, they left their homes and identified themselves with the growing communities of the north and west. Of the total assessed values of property in the southern states, eighty per cent had been wiped out by the war, and more than thirty-five years passed before these values recovered to even approximately their former totals. Florida bore its full share of the losses thus inflicted upon the south.

The impartial student of history now recognizes that the policy of the National Government following the Civil war retarded by many years the industrial development of the south and brought a lethargy from which it is but now arousing itself.

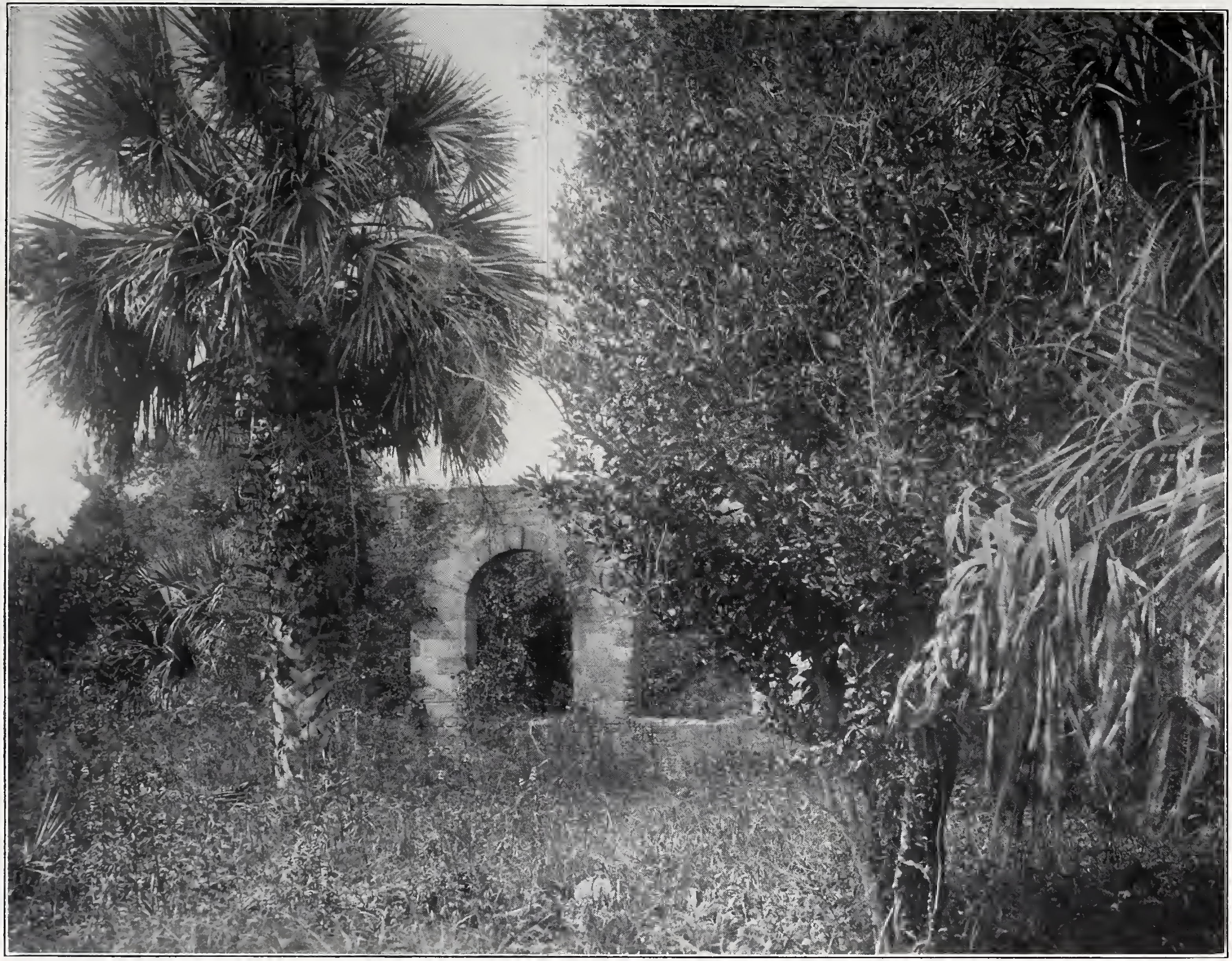
Harrison Reed, a republican from Wisconsin, who had come to Florida after the war as a Federal office-holder, was elected Governor under the new constitution. A legislature was chosen, many of its members negroes, and strongly republican in its majorities. It promptly ratified the Thirteenth and Fourteenth Amendments to the Federal Constitution. Following this procedure an Act of Congress, June 25, 1868, readmitted Florida to representation on the floors of Congress, and the new state officers were inaugurated on the Fourth of July following.

The new constitution provided that all local officers should be appointed by the Governor, and Governor Reed naturally made many enemies in his own party by his selections. The supply of offices was entirely inadequate to meet the demand. He was charged with malfeasance in office and three attempts were made to impeach him, but all failed. He was a man of unswerving integrity, but he found himself in a position and in surroundings which only the genius of a Napoleon could have mastered and controlled.

Ossian B. Hart was elected Governor in 1872 and the increasing population of the state by this time entitled it to two representatives in Congress. Governor Hart died in 1874 and was succeeded by Lieut.-Gov. Marcus L. Stearns.

INDUSTRIAL PROGRESS

The republican party, mainly through the negro vote, was in power in Florida from 1868 to 1876, when George F. Drew was elected Governor by a democratic vote. He was chosen at the same general election which was so close through the United States that Florida's four electoral votes were necessary to decide between Samuel J. Tilden and Rutherford B. Hayes for the presidency, which was awarded to the republican candidate by the Electoral Commission.



PRESENT RUINS OF OLD SPANISH MISSION STANDING NEAR NEW SMYRNA. BUILT PROBABLY IN THE 16TH CENTURY

This was afterward used as sugar mill but was abandoned at the outbreak of the Indian wars

Governor Drew's election was welcomed by the people of Florida as a return to home rule. The state's finances which had fallen to a low ebb, revived and its bonds rose in the markets from the quotation of sixty-five cents on the dollar to par; taxes were reduced and a new era of prosperity was begun, wherein the industrial and agricultural growth of the state started in earnest. The population of the state by the census of 1880 was 269,493, of which 142,605 were whites and 126,696 negroes. The assessed value of the taxable property in the state was approximately thirty-one million dollars.

William D. Bloxham was elected Governor in 1880 and his administration was marked by the inception of many railroad and other industrial enterprises. A number of charters was granted by the Legislature for railroad construction, accompanied by grants of lands. By the close of the year 1884, one thousand and forty-five miles of rail lines had been built in the state. The sections through which they were run were settled rapidly and the orange industry began to be important.

CONSTITUTION OF 1885

A constitutional convention was called in 1885, and the instrument then adopted became effective January 1, 1887. This constitution showed an increasing socialistic tendency among the people, in that it provided, with subsequent amendments, for the election of practically all state, county, and judicial officers by popular vote, the judges of the Circuit Courts being still excepted, and these are appointed by the Governor. It was, in the opinion of a considerable number of the legal authorities of the state, not so effective an instrument as the constitution of 1868, which had been adopted under the stress of Federal military power, and which placed in the hands of the Governor the appointment of a large majority of all officers in the executive and judicial branches of the state administration. In connection with the state primary election law, it practically gives to the qualified electors of the state the naming of all their officers, state and national, with the exceptions named. The large majorities in Florida being democratic, all the administrations since 1876 have been directed by that political party.

By the constitution of 1885, the office of lieutenant-governor was abolished, the duties of that position devolving upon the president of the State Senate. The regular sessions of the State Legislature were made biennial, beginning in April of the odd numbered years and the sessions were limited to sixty days.

Edward A. Perry was elected Governor in 1884 and, according to custom, assumed his office at the beginning of the following year. Francis P. Fleming was elected his successor in 1888, the vote of the state at this election being 66,641. Henry L. Mitchell was his successor in 1892, and William D. Bloxham was called for the second time to the executive chair in 1896.

INDUSTRIAL DEVELOPMENT

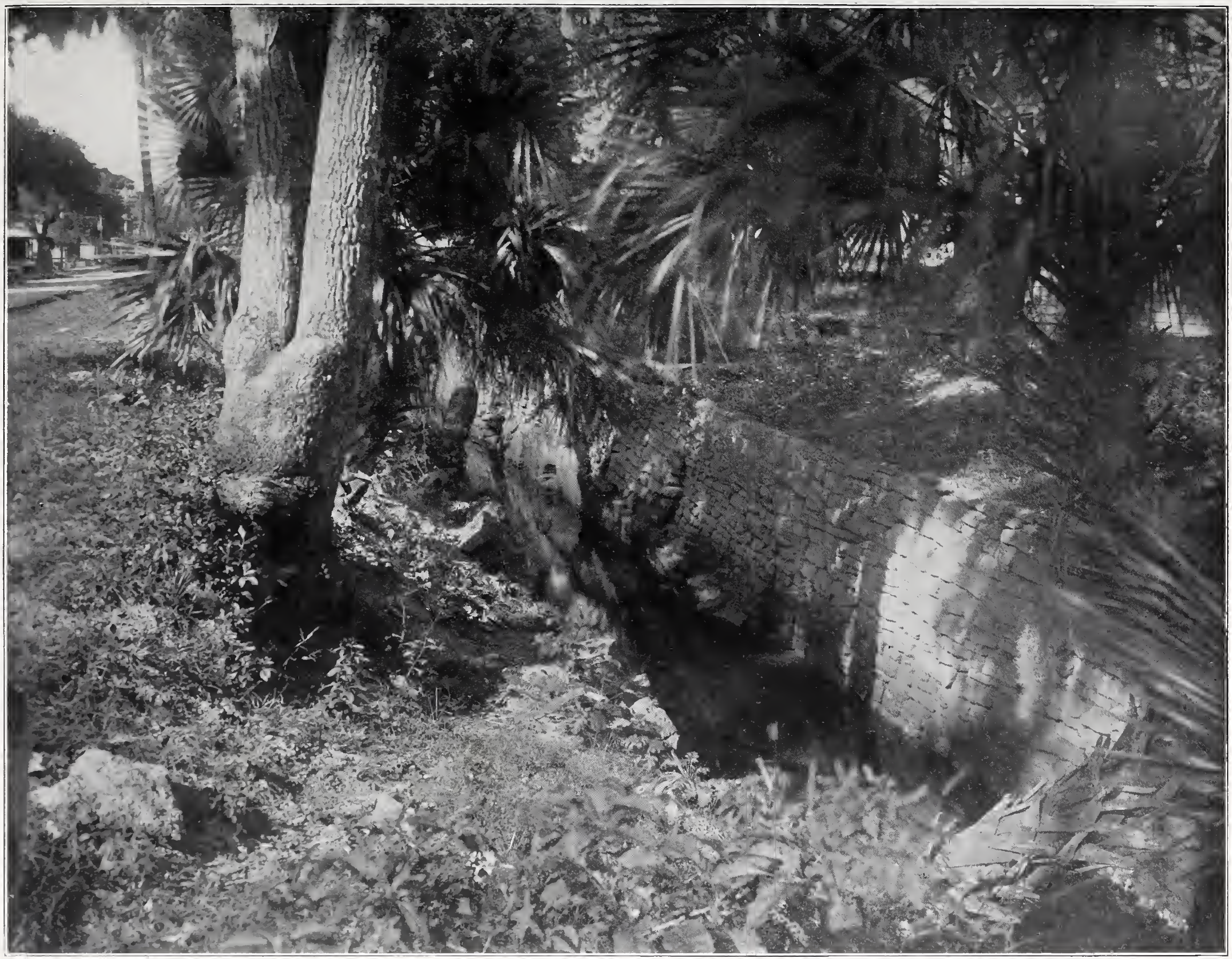
The census of 1890 gave Florida a population of 391,422, of which 224,949 were whites and 166,475, negroes. It was about the beginning of this decade that the state received a tremendous impetus toward its present industrial prosperity through the beginning of investments by Henry M. Flagler, Henry B. Plant and others. Mr. Flagler's operations were along the Atlantic coast of the state, in the building of the Florida East Coast Railway, which early in 1912 was completed to Key West, a distance of five hundred and twenty-two miles from its northern terminus at Jacksonville. He opened the east side of the state to an immense tourist travel by the erection of the most magnificent system of hotels along the coast that has ever been planned for the delectation of pleasure and health seekers. Also by providing ample transportation facilities, he developed the vegetable and fruit production of the Indian River section and of the entire east coast, to the value of many millions of dollars each year. His expenditures in Florida to the beginning of 1912 aggregated not far from sixty million dollars.

Mr. Plant's efforts were directed to the development of the middle and southwestern sections of the state, through railroad construction, the building of splendid terminals and a magnificent hotel at Tampa.

The discovery of immense deposits of phosphate in the southwestern part of the state in 1881, has developed an enormous export trade and has added much to the wealth of the state. The timber and naval stores products of Florida have made the state of the largest commercial importance to the world. The development of these and other Florida resources has made the real history of the state since 1890, and this is described more fully elsewhere in this story of Florida.

FLORIDA'S DISASTERS

The industrial growth of the state has been interrupted by events which seemed at the time of their coming to assume the proportions of disasters. An epidemic of yellow fever came to Jacksonville and



OLD DRAINAGE DITCH AND CANAL, PART OF EXTENSION SYSTEM BUILT BY ENGINEERS OF DR. TURNBULL IN DEVELOPMENTS AT NEW SMYRNA
This drain is now used for draining Main Street of New Smyrna

Fernandina in 1888, with a death loss of about ten per cent of all the cases. Jacksonville's death list included about five hundred of her citizens.

A breath of cold from the Northwest swept over the state January 12, 1886. It wrought much damage in the northern and middle portions of Florida. The "Great Freeze" came on the night of December 29, 1894. The temperature went to fourteen degrees above zero at Jacksonville and lower in some of the northern sections of the peninsula. Two million boxes of ungathered oranges on the trees were frozen solid. Young trees were killed and the older and hardier trees were seriously damaged. Not quite five weeks later, on the night of February 7, another destructive cold came, killing practically all the citrus trees that had survived the previous disaster in the northern and middle portions of the state.

The losses from these two storms, directly and indirectly, amounted to no less than fifty millions of dollars. The result was an entire revolution in the orange growing industry, the groves being renewed further south in the state. The industry has reached proportions as great as those which were destroyed, and it is increasing in importance and value each year.

The fire which swept Jacksonville, May 3, 1901, was one of the great conflagrations of history. The financial loss was above fifteen million dollars, but Jacksonville's recovery from that disaster has far surpassed all losses and has excited the admiration of the world.

In the solution of her educational problems Florida has laid the foundations, and has made rapid progress in the establishment of a school system which is to give the benefits of practical training and of higher and technical education to increasing thousands of pupils at the minimum of cost.

The financial credit of the state is equal to the best in other states and its finances are based upon the solid foundations of integrity in the administration of its affairs and upon an unparalleled prosperity.

* * *

Four hundred years have passed since Ponce de Leon, the Spanish adventurer, landed upon these shores. Almost from the day of his coming, Florida has been a battlefield. It has been the scene of strife. Every section of this fair land has been bathed in the blood of slaughter and massacre. So continuous has been this warfare that the intervals of peace have been like the oases in the Great Desert.

While the world owes to the Spaniard the discovery of Florida, his presence in the land has been a curse. He came in search of gold and the search was marked with blood and butchery. He came, not to create wealth, but to take by force the wealth that had been created. He opposed those who would have developed the natural resources of the land. He was a destroyer, not a builder.

It was not until the English sought in the seventeenth century to spread the industry of the Carolina Colony over the southern peninsula, that the first gleam of hope came to the new country, yet that advance was opposed by a hundred years of war and retaliation. The English occupation of Florida in 1763, brought an era of peace and development, but it was broken by the Revolutionary war. Spain reoccupied the land in 1784 and the dark pall of her presence again spread over the country.

Florida became a possession of the United States in 1821, and once more hope dawned upon the stricken land, but soon began the aggressions of the native tribes, which culminated in the Seminole war.

Fifteen years of quiet preceded the outbreak of the Civil war. The unrest of Reconstruction retarded progress until 1876, when Florida entered at last upon an era of progress that has remained undisturbed for nearly forty years.

Of the four centuries of her existence as a part of the civilized world, hardly sixty years have been given to her upbuilding through serious, concerted and continuous effort. But the fruits of the decades since peace has come, have demonstrated the richness of her resources with a growth that has no parallel. Her cities, her farms and groves, her mines and mineral wealth, her splendid climate and her rich soils, have made The Land of Flowers a great industrial empire, whose future is but faintly presaged by the accomplishments of the past.

* * *

GOVERNORS OF FLORIDA

TERRITORIAL

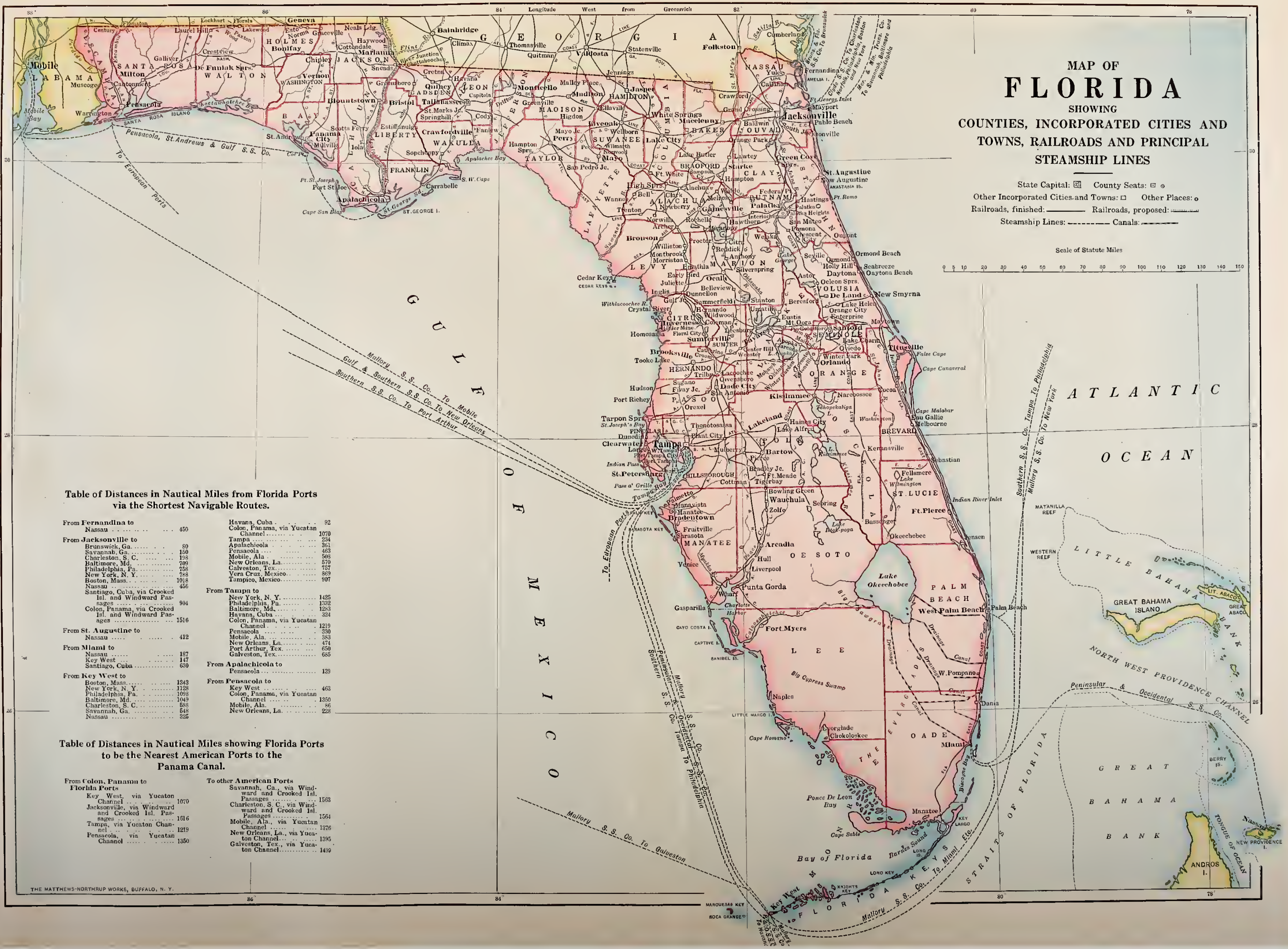
Gen. Andrew Jackson—Military Governor	1819
William P. Duval	1822
John W. Easton	1834
Richard K. Call	1835
Robert Raymond Reid	1839

Richard K. Call	1841
John Branch	1844
STATE	
William D. Mosely	1845
Thomas Brown	1849
James E. Broome	1853
Madison S. Perry	1856
John Milton (Died April 1, 1865)	1861
A. K. Allison (April to July)	1865
William Marvin (July to December)	1865
David S. Walker	1865
Harrison Reed	1868
Ossian B. Hart (Died in office, 1874)	1872
Marcellus L. Stearns	1874
George F. Drew	1876
William D. Bloxham	1880
Edward A. Perry	1884
Francis P. Fleming	1888
Henry L. Mitchell	1892
William D. Bloxham	1896
William S. Jennings	1900
Napoleon B. Broward	1904
Albert W. Gilchrist	1908
Park Trammell	1912

CHAPTER II

GEOLOGICAL

Mobil
A L A
Mobile Bay
THE MA



MAP OF FLORIDA

SHOWING

COUNTIES, INCORPORATED CITIES AND TOWNS, RAILROADS AND PRINCIPAL STEAMSHIP LINES

State Capital: ▣
County Seats: ▫ ◦
Other Incorporated Cities and Towns: □
Other Places: ○
Railroads, finished:
Railroads, proposed:
Steamship Lines:
Canals:
Scale of Statute Miles
0 5 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
Longitude West from Greenwich
88° 86° 84° 82° 80° 78°
30 28 26
GEORGIA
ALABAMA
GULF OF MEXICO
ATLANTIC OCEAN
STRAITS OF FLORIDA
FLORIDA KEYS
GREAT BAHAMA BANK
LITTLE BAHAMA BANK
NORTH WEST PROVIDENCE CHANNEL
TONGUE OF OCEAN
GREAT BAHAMA ISLAND
ANDROS I.
NEW PROVIDENCE I.
Nassau
Mobile
Pensacola
Tallahassee
Jacksonville
St. Augustine
Gainesville
Ocala
Tampa
Orlando
Key West
Miami
Lake Okeechobee
Mallory S.S. Co. To Mobile
Gulf & Southern S.S. Co. To New Orleans
Southern S.S. Co. To Port Arthur
Mallory S.S. Co. To Galveston
To European Ports
Pensacola, St. Andrews & Gulf S.S. Co.
Peninsular & Occidental S.S. Co.
Southern S.S. Co. Tampa To Philadelphia
Mallory S.S. Co. To New York
Clyde S.S. Co. To Charleston, Norfolk, Philadelphia, Boston and New York
Mer. & Min. Trans. Co. To Savannah, Baltimore and Philadelphia
Bruns. & Fernandina S.S. Co. To Brunswick
Mallory S.S. Co. To Miami, Etc.

Table of Distances in Nautical Miles from Florida Ports via the Shortest Navigable Routes.

From Fernandina to		
	Nassau	450
From Jacksonville to		
	Brunswick, Ga.	80
	Savannah, Ga.	150
	Charleston, S. C.	198
	Baltimore, Md.	709
	Philadelphia, Pa.	758
	New York, N. Y.	788
	Boston, Mass.	1018
	Nassau	456
	Santiago, Cuba, via Crooked Isl. and Windward Passages	904
	Colon, Panama, via Crooked Isl. and Windward Passages	1516
	Havana, Cuba	92
	Colon, Panama, via Yucatan Channel	1070
	Tampa	234
	Apalachicola	361
	Pensacola	463
	Mobile, Ala	508
	New Orleans, La.	570
	Calveston, Tex.	757
	Vera Cruz, Mexico	869
	Tampico, Mexico	907
From St. Augustine to		
	Nassau	412
From Miami to		
	Nassau	187
	Key West	147
	Santiago, Cuba	630
From Key West to		
	Boston, Mass.	1343
	New York, N. Y.	1128
	Philadelphia, Pa.	1098
	Baltimore, Md.	1049
	Charleston, S. C.	588
	Savannah, Ga.	548
	Nassau	325
From Tampa to		
	New York, N. Y.	1425
	Philadelphia, Pa.	1332
	Baltimore, Md.	1283
	Havana, Cuba	324
	Colon, Panama, via Yucatan Channel	1219
	Pensacola	330
	Mobile, Ala.	383
	New Orleans, La.	474
	Port Arthur, Tex.	650
	Galveston, Tex.	685
From Apalachicola to		
	Pensacola	139
From Pensacola to		
	Key West	463
	Colon, Panama, via Yucatan Channel	1350
	Mobile, Ala.	86
	New Orleans, La.	228

Table of Distances in Nautical Miles showing Florida Ports to be the Nearest American Ports to the Panama Canal.

From Colon, Panama to Florida Ports		
	Key West, via Yucaton Channel	1070
	Jacksonville, via Windward and Crooked Isl. Passages	1616
	Tampa, via Yucaton Channel	1219
	Pensacola, via Yucatan Channol	1350
To other American Ports		
	Savannah, Ca., via Windward and Crooked Isl. Passages	1563
	Charleston, S. C., via Windward and Crooked Isl. Passages	1564
	Mobile, Ala., via Yucatan Channel	1376
	New Orleans, La., via Yucaton Channel	1395
	Galveston, Tex., via Yucaton Channel	1499

THE MATTHEWS-NORTHRUP WORKS, BUFFALO, N. Y.

A BRIEF sketch of the geological history and formations of Florida is necessary to a clear understanding of certain conditions here, which exist in no other section of the United States. These conditions provide, over the immense area of the state, an inexhaustible supply of water by conserving the annual rainfall; they provide a natural system of distribution and they have created a diversification of soils which, with the climate, give a wider range of vegetable products than belongs to any other state. They have permitted in ages past the formation of mineral deposits, which are the present source of large profit and which already have given Florida an important place in the commerce of the world.

ATLANTIC COASTAL PLAIN

Florida is a part of the great Atlantic coastal plain of the United States. This plain embraces a strip of varying width along the Atlantic and Gulf coasts, which covers the eastern portions of New Jersey, Delaware, Maryland, Virginia, North and South Carolina and Georgia, and all of Florida, as well as much of the southern sections of Alabama, Mississippi, Louisiana, and Texas. This formation is sedimentary, containing clay, shale, limestone, and sandstone, which were brought in prehistoric times from the mountains and high lands lying to the north and west. In these earlier periods of creation, what is now included in this coastal plain lay beneath the waters of the ocean, and the materials washed from the higher lands determined in large measure the character of the area which, with the gradual elevation of the continent, has become the lands that now border the ocean and the gulf.

But the present area of Florida being then covered by water was further removed than the rest of the coastal plain from this source of sedimentary deposit, and the clear sea was more favorable to the existence of an abundant shell life, the accumulation of which formed lime rock. Hence, with the gradual lifting of Florida above sea level, the underlying foundation rock was a massive and very thick bed of limestone. And in this respect Florida differs much in its geological formations from the other states included in the coastal plain.

Formerly it was a generally accepted fact that the greater part, if not all, of Florida was of coral formation, but this view has been upset by recent scientific investigations.

VICKSBURG LIMESTONE

Florida deposits are all of comparatively recent date geologically. The oldest formation known in this area is called by scientists the Vicksburg limestone, which is classified in the Oligocene division of the Cenozoic Period of creation. It was formed through the ages by constant accretions of minute organism known as foraminifera, the shells of these small animals with larger shells making up the limestone. The deposit became solid or but slightly porous by the chemical deposits and action of sea water.

This formation is a part of the extensive foundation which encircles the gulf from Florida to Louisiana, and it is found somewhat widely distributed in Alabama and Mississippi. In Florida it lies in a generally horizontal stratum, but in the mighty upheaval of creation it was given an elevation in the western and northern central portions of the peninsula, with a dip toward the gulf on the south and west, and toward the Atlantic on the east. This elevation formed a ridge which the topographical surveys of the state have clearly defined.

A general line of elevation of from one hundred to two hundred feet, and in places reaching much higher, extends from the western bounds of the state at the Perdido river, and follows closely the Georgia state line as far east as Baker county. This elevated plateau is marked by ranges of hills, from one hundred to more than two hundred feet high. They are broken by the valleys of the Apalachicola and the Choctawhatchee rivers.

THE BACKBONE OF FLORIDA

Extending in a generally southerly direction from the Georgia state line, another plateau of some elevation joins, or crosses, that already described. In its northern beginning it extends from the Suwanee River valley in Hamilton county, to the eastern limit of Baker county. From this width of about sixty miles its longitudinal

JUPITER INLET

AMONG THE FLORIDA KEYS

extension, becoming narrower as it is traced southward, covers Baker, Bradford, the eastern portion of Hamilton and Suwanee counties, the western parts of Clay and Columbia counties, the central portion of Alachua, the eastern part of Levy and the western part of Marion, parts of Citrus, Sumter and Hernando counties. In this area the elevation is close to one hundred feet, with an occasional rise above two hundred feet and breaks below the fifty-foot mark above sea level. Pasco and Hillsborough counties have areas of elevation exceeding one hundred feet, and Polk county has two distinct plateaus above the one hundred and fifty-foot level and including ranges from two hundred to two hundred and fifty feet high.

It will be seen that the general course of this ridge lies closer to the gulf than to the ocean, and that east of it is a section that includes a large portion of the total area of the state.

The contour line of fifty feet elevation above sea level, from the western limit of the state, follows generally the line of the gulf and from six to twenty miles distant, as far as Lafayette county. There it sweeps further from the gulf, returning again to the lesser distances in Levy and Citrus counties, and it continues with many twists and turns into Hillsborough county. There it takes a southerly course into De Soto county to about the latitude of twenty-seven degrees, when it runs east and northeast through Polk and Osceola counties to the St. Johns river, which it follows rather closely to Duval and Nassau counties.

This leaves the large portion of the state south of about the middle line of De Soto county, less than fifty feet above sea level. This section is known under the general name of The Everglades, in which, in spite of the seemingly low levels and vast expanse, the variations in elevation are sufficient to justify the greatest drainage project ever undertaken by engineers.

GENERAL ELEVATIONS

This sketch of the topography of Florida will serve to contradict the impression that the entire state is a low-lying, swampy area, only a few feet above the surrounding ocean. It has no mountains nor high ranges, as elevations are measured in many other states. The greatest elevation above sea level within the state, so far authentically recorded, is Orange hill in Washington county, which, it is claimed, reaches five hundred and sixty feet. Florida's seaports, of course, have the same elevation as those of the Atlantic and Pacific seaboards everywhere. The state is bordered by a wide area less than fifty feet above the sea, just the same as every other Atlantic state as far north as Maine, and it is just as adaptable to industrial occupation.

This impervious Vicksburg limestone floor of the state serves also as a natural watershed to distribute the water supply over wide areas. It appears at the surface in limited sections, but for the most part it is buried beneath the geological deposits of later periods, consisting of clays, a later limestone, marls and shell beds, residual deposits, river-formed deposits, recent rock formations, sand dunes and shell mounds containing Indian remains.

The general line of its upheaval forms the central Florida plateau sometimes called the "backbone" of the state. It is found in places within forty feet of the top of this ridge. Its dip toward the east and west is marked. It is reached almost a thousand feet below the surface at Jacksonville. Following the Atlantic coast southward it rises. for at Titusville, one hundred and fifty miles from Jacksonville, it is found at a depth of about one hundred feet. From near this section it takes another dip, and at Palm Beach, another hundred and fifty miles south, it lies more than a thousand feet below the surface, and on the Florida keys, borings of more than two thousand feet have failed to reach it.

In the clay formations overlying the Vicksburg limestone, have been found in widely scattered parts of the state, the fossil remains of the mastodon, elephant, rhinoceros, saber-toothed tiger, horses, bison, deer, tapirs, giant sloths and glyptodons.

FLORIDA MEASUREMENTS

The peculiar shape of Florida almost forbids description. It is an irregularly formed peninsula whose Atlantic coast line trends almost southeast. The state has an arm extending westward from its central line a distance almost as great as its north and south extension. Its length by a north and south air line, from the St. Mary's river to Key West, the southernmost point of United States continental possessions, is approximately four hundred and twenty-five miles. The extreme width across the northern part of the state, from the ocean to the Perdido river, which marks the Alabama boundary, is three hundred and seventy miles. The lower peninsula in its greatest width, about the line of Tampa, measures one hundred and fifty miles.

In area Florida is the second state east of the Mississippi river, Georgia alone being larger. It contains a surface area of 58,666

ON THE ST. LUCIE RIVER

square miles, of which 3,805, or a little more than 6 per cent, are fresh water surface.

The coast line of the state measures approximately thirteen hundred miles, which by the indentations of bays and sounds are increased to almost sixteen hundred miles.

The conditions governing the geological formation of Florida led to the creation of immense deposits of phosphate, peat and valuable clays, including fullers' earth and kaolin, which are considered elsewhere.

These same geological conditions existing in Florida, have made possible its unique water supply system, which conserves the rainfall, purifies it by percolation through the earth as a filter, and brings it again to the surface in many localities through inexhaustible springs, and in other places making it available through flowing wells driven by artificial means.

UNDERGROUND WATER SUPPLY

The average annual rainfall over the entire state is slightly more than fifty-three inches. This amounts to more than 921,000,000 gallons for every square mile. Allowing for losses by evaporation, drainage and all other causes, it has been estimated that at least one-half of this amount is added each year in the central part of the state to the underground water supply. By gravity it is carried deep into the earth, passing through the sand, clay and upper limestone strata, until eventually it reaches the underlying and practically impervious Vicksburg limestone.

The limit to which water percolates into the earth has never been reached by borings, but it is well known that the greater the depth, the greater is the pressure forcing it to seek an outlet to higher levels. Something more than five hundred pounds pressure on each square inch is necessary to bring the water to the surface through a boring eleven hundred and fifty feet into the earth, and several artesian wells in Florida exceed this depth.

The outlet for this pressure is found in numerous natural springs in the middle and northern sections of the state. The dip of the Vicksburg limestone stratum carries the water beyond the land limits of the state and discharges it through springs beneath the ocean surface. Such a spring, evidently of large size, exists a mile or more off the Atlantic coast some distance south of St. Augustine. When the ocean surface is quiet, the water from this spring may be seen bubbling up through the salt water, covering an area of more than an acre and perfuming the atmosphere with sulphuretted hydrogen. From this spring, surrounded as it is by the brine of ocean, vessels have refilled their empty tanks. A similar spring is known in the Gulf of Mexico, and it can not be doubted that many others exist at depths too great for observation at the ocean surface.

GREAT NATURAL SPRINGS

Of these great natural outlets within the borders of the state, Silver Springs, in Marion county, is the largest, and typical of all. It supplies a large portion of the flow of the famous Ocklawaha River. Bursting forth from the face of a limestone rock through several openings or vents, it discharges 369,000 gallons every minute of crystal-clear water, forming at once a stream on which might be floated deep draught vessels and creating a current of several miles an hour. The refraction of light through this water, more than thirty feet deep, gives prismatic hues to white objects on the bottom of the basin.

Other springs similar in character exist in other parts of Marion county, and in Levy, Columbia, Suwanee, Hernando, and Hamilton counties, from which the total estimated flow exceeds eight hundred thousand gallons a minute.

Formerly the source of this immense flow and of the pressure by which it was forced to its outlets, was supposed to be in the far distant Appalachian mountains and hills of northern Georgia and North Carolina, but this idea has been dispelled by the observation that the flow from these springs is increased soon after heavy rainfalls in their respective vicinities. Other observations have established these sources as more or less local.

In their study of the phenomena governing this distribution of Florida's water supply, scientists have agreed that the Vicksburg limestone floor, underlying the state, makes it possible. The rainfall percolates through the upper strata, eventually reaching this lower layer of rock. With its dip toward the ocean it serves as a watershed carrying the water down its eastern and western slopes, toward and under the areas that are prolific of natural springs or other outlets for this water. The water having reached this underlying stratum of rock, is confined between it and the overlying strata, and as it flows to the lower depths the pressure from behind and above forces it to seek outlets through whatever openings or breaks in the overly-

ARTESIAN WELL, JACKSONVILLE—FLOWS 2,000,000 GALLONS EVERY TWENTY-FOUR HOURS FROM A DEPTH OF 980 FEET
This is one of eleven wells supplying city of Jacksonville

ROCKY COAST ON MERRITT'S ISLAND—LOWER EAST COAST

ing rocks it may chance to reach. It is simply an illustration of the familiar principle that water seeks its level.

FLORIDA'S ARTESIAN WELLS

When, therefore, an artificial opening is made through the overlying burden of rock strata, an outlet is made through which the imprisoned water rushes with a force proportionate to the pressure that impels it from behind or above. Such an outlet is the artesian well of Florida. These wells are of two classes, determined by the height to which water rises in the bore by the natural pressure behind it. The flowing well is one in which this pressure is sufficient to force the water to or above the surface of the earth at the point of discharge. Non-flowing wells are those in which the water does not reach the surface but in which it has to be raised by artificial means.

A characteristic common to all artesian water supply in the state is its impregnation with various chemical compounds in solution. Chief and most common is sulphuretted hydrogen. This, however, is quickly evaporated on exposure to the air, removing both the taste and the rather disagreeable odor. Some chemicals remain in solution, giving valuable medicinal properties which in some localities have made the springs famous as health resorts and restorers.

The area of flowing wells, so far as has been determined by the Florida State Geological Survey, is limited to a section along the east coast of the state, bordering the St. Mary's river, following the course of the St. Johns river and along the coast as far south as Palm Beach; also along the Gulf coast south from Hillsborough bay and covering large portions of Hillsborough, Lee and De Soto counties; following also the courses of Peace creek and the Kissimmee river in De Soto, Polk and Osceola counties; also along the line of the Gulf coast from the western border of the state to Franklin county. These wells are successfully driven in other isolated sections, notably in Marion and Osceola counties. That the area will be developed beyond its present limitations by later discoveries is not beyond the range of probability.

CHARACTERISTICS OF ARTESIAN WELLS

The conditions that determine the area of flowing wells are probably the depth of the Vicksburg limestone stratum beneath the surface and its dip or variation from a generally horizontal position and by local causes. Theoretically a flowing well can not be secured at or near the top of the higher plateaus in the state, and the facts bear out the theory.

The depth to which these wells must be bored to secure a satisfactory supply and quality of water, varies also in different localities, from less than one hundred feet to twelve hundred and fifty feet, which is the depth of the city well of Ocala, and fourteen hundred and forty feet in the well that was sunk to supply the Ponce de Leon Hotel at St. Augustine. This depth is determined probably by the distance of the Vicksburg limestone from the surface.

In driving an artesian well, an uncertain flow of water is usually reached at a depth between two hundred and three hundred and fifty feet, but experience has taught that a larger, steadier and more permanent flow of purer water comes when the Vicksburg limestone stratum is reached. Therefore, to secure the flow from the deeper lying stratum, the wells are driven through the upper strata and are cased with iron piping, to exclude the flow from the upper layers of rock and clay. The casing is driven down as the boring of the well proceeds. Naturally the discharge of the flowing wells has no relation to the sea level, for while some of them are but a few feet above that level, others are more than fifty feet above it.

The city of Jacksonville derives its entire water supply for domestic purposes from eleven flowing wells, with an average daily discharge of five and a quarter million gallons, at a temperature of seventy-four degrees, Fahrenheit. These wells are cased to an average depth of nine hundred and eighty feet. They vary in diameter from six inches to twelve. The flow of the largest well of this municipally owned system, is about two thousand gallons every minute.

The sub-irrigation system of the famous Sanford celery section, in Seminole county, is fed by cased flowing wells, two or two and a half inches in diameter and from one hundred to one hundred and forty feet deep, from which an average flow of ten thousand gallons an hour is obtained. These figures vary considerably in various localities of the state, by reason of different depths of the underlying limestone formations and for local causes.

The cost of drilling a flowing well varies according to the diameter and the depth at which a satisfactory flow is obtained. Owing to the uncertainty of the latter element in the problem, the contractor usually makes his charge by the foot of depth, which charge includes the necessary casing. These prices vary from one dollar a foot for a two-inch well, to three and a half dollars per foot for a well ten inches in diameter.

LIGHT-HOUSE AND WIRELESS STATION OF UNITED STATES GOVERNMENT AT JUPITER INLET

In the great area covering the southern one-third of the state, the northern limit of which seems to be determined by the dip of the Vicksburg limestone stratum, flowing wells have been driven as far down the coast as Palm Beach. It is the opinion of scientific men that in this area the pressure forcing the flow through these wells comes largely from Lake Okeechobee. It has been noted that the static head from such wells is much less than from those in the area in which the pressure comes from the higher plateaus of the state. A marked difference also is noted in the chemical contents of the discharge from these wells.

FLORIDA'S LAKES AND RIVERS

Florida's unique geological conditions are manifested also in the peculiarity of her lakes and streams. A great number of these lakes have no visible supply beyond the natural drainage of their basins, and no discharge excepting by evaporation. Their levels are maintained by natural springs and by seepage into the soil, similar to the absorption of rainfall, yet their waters are clear and often support a dense fish population. These lakes occur usually not along the coast nor in the low-lying parts of the state, but in the uplands and in sections having a rolling topography and a considerable elevation above sea level.

The formation of many of them originated in what are popularly called "sink holes." Through the natural erosion of the soil and of the underlying rock by water seeping from the surface or from the flow from springs, an underground outlet is formed through the upper limestone formation, and through this vent the water escapes to lower levels. The overlying burden of earth caves in, leaving a water-filled cavity. Gradually the opening is enlarged by the wash of rainfall and the cavity becomes large enough to be considered a lake. Eventually this process of enlargement is aided by the union of two or more sink holes until still larger bodies of water are formed. Several of these lakes occur in the western counties of the state, each of which covers from two thousand to five thousand acres. Occasionally the underground outlet is clogged through natural causes, the water is evaporated and the sink hole in course of time is filled and disappears.

With few exceptions the rivers of Florida have no rapid currents. From the general topography of the state there is insufficient fall to make them available for water power. The St. Johns river is the most important of these streams, and while it has the title of a river, it has more of the characteristics of a chain of lakes through which a sluggish current continuously moves in one direction. It has its source in Saw Grass lake, in the southern part of Brevard county, and unlike any other navigable stream under the jurisdiction of the Federal Government, it takes a northerly course, and paralleling the eastern coast of the state it reaches the Atlantic ocean near Jacksonville, three hundred miles from its source.

For more than one-half this distance it is navigable for steam vessels, and ocean-going ships come to Jacksonville, twenty-seven miles from the ocean, by a channel thirty feet deep. The normal tide variation at the city docks is eighteen inches, and tidal movement is clearly discernible seventy miles from the Atlantic.

THE EVERGLADES

The southern one-third of the state is a vast plain, varying in its elevation from sea level to less than fifty feet above. Vast areas of pine timber, hardwood hammock, open prairie, some of it covered at certain seasons of the year with water, swamp lands and low sections stretch over these southern counties. Beneath much of this territory the underlying Vicksburg limestone stratum lies very deep and in many sections it has never been reached by borings of two thousand feet.

Geologically this part of Florida was the last to emerge from the sea with the movement of the continent. Its soil is rich with the accumulations of vegetable matter deposited through uncounted centuries. It has a fertility and a productive capacity that is nowhere surpassed. It is known as The Everglades, whose reclamation for agricultural purposes has been attempted under the general supervision of the State of Florida.

Within this section, nearer the Atlantic than the Gulf side of the state, lies Lake Okeechobee, the largest body of water entirely within the limits of any single state, and, next to Lake Michigan, the largest body of water wholly within the United States. It has a surface area exceeding nine hundred square miles. It is shallow, generally circular in outline and has a surface elevation of twenty-seven feet above the ocean level. It is contained in a great, saucer-shaped limestone basin, which by the ingress of the Kissimmee river and of other feeding streams, by the sudden and heavy rainfall in certain months, and by the absence of natural outlets is overflowed, flooding the surrounding saw-grass prairie.

LAND DEVELOPMENT IN KISSIMMEE VALLEY

DRAINING ST. JOHNS VALLEY LANDS

The plan of engineers to lower the level of this lake and thereby to prevent its overflow into the adjacent territory, has been undertaken in the construction of five canals draining into the ocean at various points in Palm Beach and Dade counties. These canals are planned to be completed in 1914.

Another canal already connects Lake Okeechobee with the Caloosahatchee river and reaches the Gulf of Mexico through San Carlos Bay, near Fort Myers. The successful drainage of the lower portions of this great area would open about twelve million acres of land, much of which, it is claimed, would be suitable for settlement and cultivation.

FLORIDA SWAMPS

Florida has large areas of swamp land in which are not included the great stretches of salt marshes that border the Gulf and Atlantic coasts. Strangely enough, a large proportion of this swamp area is located at considerable elevations above the sea level. Much of it is immensely profitable from its product of cypress timber, of which Florida has a larger supply than any other southern state. With few exceptions, these swamps might be drained at comparatively small cost by opening natural waterways that have been stopped or that have been interrupted by unimportant natural barriers which inexpensive dredging would remove. When unoccupied lands in the Peninsular State shall become more valuable, because scarcer by a more dense settlement, it is probable that thousands of rich acres will be thus reclaimed and added to the arable lands of the state.

From the vicinity of Titusville, in Brevard county, a ridge of rock formation extends southward almost to Lake Worth, following closely the line of the east coast of the state and from a few yards to as many miles from it. It is broken by occasional gaps through which the natural drainage of the sections behind reaches the Indian river and the ocean. For a large part of its length it separates the valleys of the St. Johns and Kissimmee rivers from the coast, and for uncounted ages it has retained on these plateaus the rainfall and the outflow of natural springs.

The result has been the gradual accretion of vegetable mould which has been changed into deep deposits of rich muck lands. It is covered with a rank growth of wild grasses and it bears few trees, excepting an occasional palm and some palm hammocks of considerable area. Although the floor levels of these plateaus are from ten to eighteen feet above the sea, there has been no drainage aside from the slow seeping of the natural moisture to these two great rivers.

Within recent years some of the most important land developments in the south have been undertaken in the drainage of these vast areas to the Indian river and the ocean. To accomplish this, canals have been cut through this ridge which since history began has barred these waters from their natural levels. By this method, thousands of acres of the richest black muck lands to be found in the state, have been opened for agriculture and already they have added materially to the assets of Florida. These lands are particularly adapted to citrus culture and to vegetable growing, and their area is sufficient to support a population of a million people.

THE FLORIDA KEYS

A careful study of the map of Florida shows a border or fringe of islands extending along the entire eastern coast and well up along the western side of the state. In some places these islands have become a part of the mainland by their slow and gradual upheaval from the waters of the ocean.

This formation extends along the east side of the state from Georgia on the north and forms an inland waterway, affording protected navigation, with few interruptions, for small craft from Charleston, South Carolina, to Key West. This natural waterway is known by various names along the east coast—Nassau Sound at Fernandina; Pablo creek south of the St. Johns river; North river, Matanzas river at St. Augustine; Halifax river at Ormond and Daytona; Mosquito lagoon, Banana river, Indian river, St. Lucie sound, Jupiter river, Lake Worth, and Biscayne Bay are among the more important of these waters.

Cutting away and dredging the natural barriers along the route where it was necessary, has opened a way the length of the state for light draft vessels, and plans have been put under contract, with the sanction of the state, to make the course available for commerce through its entire length, as it is already for a large share of it.

South from Biscayne Bay these islands are known as The Florida Keys. Their geological formation differs from that of the islands lying further to the north and from that of any other islands on the earth. They follow at increasingly greater distances from the mainland of the state its general contour as they extend southwest and west around the southern end of the state to Key West.

TROPICAL GROWTH ALONG LOWER INDIAN RIVER

NATURAL GROWTH OF COCOANUT PALMS ON LOWER EAST COAST

MANGROVE JUNGLE ON FLORIDA KEYS

"BLOWING ROCKS" ON LOWER EAST COAST

Outside the line of keys are some of the most dangerous reefs and shoals that border the entire coast line of the United States. They were for centuries a fearful menace to the navigation of these ocean waters, until the Federal Government established a chain of lights for the protection of mariners.

The keys themselves extend as a long line of narrow reefs, hundreds of them, varying in size from Key Largo to the little islands rising a few inches or feet above the waters and but a few acres in extent. Beginning with Bahia Honda Key on the route to the south and west, the islands depart from the long and narrow form and take more irregular and varied contours.

In the main, they are of coraline formation, rocky and bleak, but supporting on their comparatively poor soils a rank growth of tropical vegetation and air plants. They are capable of supporting but a scant human population, for on many of the keys there is no natural source of potable water, and the supply is secured by conserving the rainfall or by evaporating salt water. The sea abounds in a rich profusion of fish life.

Among the more important of these islands are: Elliott's Key, Old Rhodes Key, Angelfish Key, Key Largo, Islamorada, Upper Matecumbe, Tea Table, Indian Key, Long Key, Conch Key, Duck Key, Grassy Key, Crawl Keys, Fat Deer Keys, Bamboo Key, Stirrup Key, Key Vaca, Boot Key, Knight's Key, Pigeon Key, Bahia Honda, Summerland Keys, Big Pine Key, Cudjore Key, Sugar Loaf, No Name Key, Saddle Bunch, Big Coppitt, Rockland Key, Boca Chica, Raccoon Key, Spanish Keys, Eagle Key, Mullett Key, Key West and Dry Tortugas.

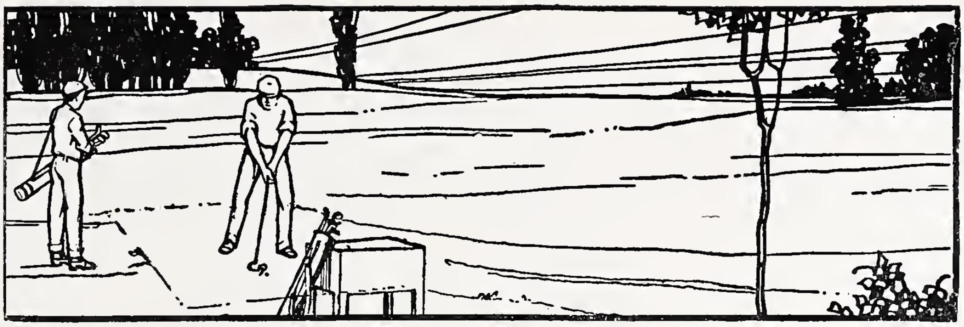
THE GULF COAST

The west or Gulf coast of Florida differs much from the east side of the state in its lack of this continuous border of islands and in the consequent absence of an uninterrupted inland waterway closely following the outline of the coast. Lying off the southwestern coast of the state is a large area of islands known as the Ten Thousand Islands. They rise from the shallow waters of the Gulf of Mexico and vary in size from small patches of green on the surface of the gulf, to islands of many acres. A number of them has been put under profitable cultivation in the production of pineapples, bananas and tropical fruits. Many of them are covered with rich soils and but for their isolation and inaccessibility, as at present, might be made of large agricultural value.

The west coast of Florida is bountifully supplied and indented with splendid harbors of Nature's own building. That at Pensacola has room for the assembled navies of the world, with a natural channel of forty feet or more to the ocean highways. Tampa Bay brings to Tampa's wharves a deep-water commerce of immense value, and Charlotte Harbor is one of the finest land-locked anchorages on the coast of the United States. It needs but little deepening to make it equal to the best for the purposes of shipping, and already it has a heavy tonnage. Apalachicola, at the mouth of the river of the same name, has also a fine harbor, and besides these the Gulf coast of Florida has many deep-water protected bays that will be known to the world when the commerce of the south and through the south shall be further developed.

CHAPTER III

CLIMATE



CLIMATE and industrial accomplishment have an intimate relation, particularly where occupation is largely agricultural. In no part of the United States has this statement more pertinent proof than in Florida, and it is probable that in no respect has the Peninsular State been more misunderstood than in the characteristics of its climate.

Some facts may be given which distinguish the state in this respect, and however much they may contradict general impressions, they are based upon actual observations covering from twenty to eighty-five years.

Florida's annual variations of temperature, between the extremes of summer and winter, are less than those of any other state in the Union.

The highest temperatures ever recorded by the United States Weather Bureau observers in Florida, are lower than the official records at Chicago, St. Louis, and a score of inland cities in the north and west.

Florida's normal annual rainfall varies by only small percentages from those of northern inland states.

Florida's changes of temperature and other weather conditions are not abrupt, a fact which makes the climate in many northern latitudes most trying and severe.

Sunstroke is practically unknown in Florida, due to the prevailing high percentage of humidity in the atmosphere. Heat prostrations occur occasionally, but they are rarely fatal and recovery follows speedily with rest and with little or no medical treatment.

These facts and many others of like import are explained by the peculiar geographical location of the state. It is peninsular in form, stretching from the general southerly line of continental United States more than four hundred miles into the southern seas and in no part exceeding one hundred and fifty miles in width. No section of the state is so remote from the ocean on the east, or the Gulf of Mexico on the west and south, that it is not affected by their tempering influence. The great gulf stream, bordering more than one-half of the coast line, moderates temperatures and influences rainfall and wind movement throughout the entire year.

INLAND WATERS

Scattered through the state are hundreds of lakes and rivers, which also have a marked influence on local temperatures. When it is remembered that of the gross area of Florida, more than thirty-eight hundred square miles, or seven per cent, is inland water surface, the extent of this influence may be appreciated.

The United States Weather Bureau has discovered that climatic conditions prevailing in the peninsular part of the state vary somewhat from those in the western section. Therefore, disregarding state boundaries, the counties lying west of the Apalachicola river are considered rather as a part of the Alabama section than as belonging to Florida proper. The conditions that prevail in the northern part of the state differ from those in the southern section, to an extent that the cultivation of many varieties of fruits is profitably undertaken in the lower sections, which would be commercially impossible in the northern part.

In discussing the climatology of Florida, three things are to be considered—temperatures, rainfall and humidity, and wind movement. The statistics quoted are based upon observations of the United States Weather Bureau covering periods of varying duration and, in a few instances, upon records preserved by scientific men for many years antedating the establishment of Federal stations in the state.

All records of temperatures are measured by the Fahrenheit scale. The mean, or average, temperatures of each day have been determined by different methods. Prior to the establishment of the weather bureau in Florida, the average of the thermometrical readings taken at 7 A. M., 2 P. M. and 9 P. M. was accepted as the daily average, and from these results the monthly, seasonal, and annual normals were deduced. Since self-registering instruments have been in use by the department, the mean temperature has been determined by adding the highest and lowest daily readings and dividing the total by two.

A summary of climatological conditions and normals of that part of the state lying east of the Apalachicola river, has been prepared by Mr. A. J. Mitchell, section director for weather bureau service in peninsular Florida. His reports cover the two sections into which that part of the state is divided for convenience of observation. The line of demarcation between the two sections lies along the twenty-ninth degree of latitude, which crosses the state close to the southern boundary of Marion county.

NORTHERN FLORIDA

"The district comprises that section of Florida north of the twenty-ninth parallel and east of the eighty-fifth meridian, aggregating something less than nineteen thousand square miles, with a population of about three hundred thousand, or fifteen to the square mile. The land rises gradually from the coast, culminating in elevations of one hundred and fifty to two hundred feet in some counties west of the Suwanee river; in fact, most of the interior portion of the district remote from the coast, is about seventy-five to one hundred feet above sea level; small streams and shallow lakes are numerous over most of the section.

"The normal annual isothermal line of sixty-eight degrees begins at Jacksonville, in the northeastern part of the state, moving thence southwest with a slight dip in the interior of the section, to Pensacola. The difference of four degrees in latitude southward to Miami gives about seven degrees change in temperature. Average temperature, however, is not the factor with which the fruit and vegetable growers have to do. The nature of some products grown and their susceptibility to damage by cold are involved in the degree to which the temperature may fall during extreme conditions.

"The seasonal temperatures, based on long records of well selected stations are: Summer, eighty degrees; autumn, seventy-two degrees; winter, fifty-six degrees; and spring, seventy degrees, indicating that the contrast in seasons is not marked. Notwithstanding the uniformity of temperature, however, past records show that it is susceptible to decided ranges. While uniform temperatures are the rule, yet radical departures from normal conditions have occurred, chiefly in February and December. There have been marked cold waves, particularly in December, 1894, and in February, 1895 and 1899. During the last named month—February, 1899—the lowest temperature ever recorded in the state—two degrees below zero—occurred at Tallahassee, in Leon county, and on the same date, February 13th, the section comprised a zone whose minimum temperatures ranged from two degrees below zero, to ten and fourteen degrees above that point. This was the coldest weather of which there is authentic record in Florida.

LONG SUMMERS

"As indicated by the latitude, the temperature of the section averages high, but the discomfort is less than that usually accredited to sections located in the semitropics. In fact, the discomfort generally arises from the long continuation of summer weather rather than from the extreme heat thereof, which rarely reaches one hundred degrees on the coast. July and August are the warmest months with an average of eighty-one degrees; thereafter there is a rapid decline to fifty-six degrees in December and January, which are the coldest months. There are only about two degrees difference in the average temperatures of spring and autumn, the latter being the warmer. The summers are warmer in the interior of the state than on the coast, and conversely, cooler in the winter. Days of extreme heat are usually followed by convectional thunder showers, temperature change of twenty degrees or more within a few hours being a feature of summer weather.

"Frost may occur over the northern portion of the section during the first decade in November and at intervals light frost may be expected during the last of October. It is rarely damaging, however, before the second decade of November, or the early part of December, and occasionally the lower counties of the section experience none of any severity during the entire winter. The last of February, on an average, marks the passing of dangerous frost, although the vagaries of the climate are indicated in the possibility of frost occurring as late as the first week of April. Fortunately, however, such incidents are so rare as not to merit serious reflection.

"March frosts have damaged fruit bloom over some of the northern counties, but such is possible, as a rule, only when the preceding February has been abnormally warm and wet thereby stimulating premature growth. This condition when followed by midwinter temperatures in March, is necessarily damaging to bloom and tender buds.

PRECIPITATION

"As a rule, the rainfall is uniform and seasonable, the proximity of the Atlantic Ocean and the gulf being such as to render a severe drought an unexpected contingency. Abnormal distribution of atmospheric pressure occasionally results in dry spells and the importance of irrigation, even in this land of heavy precipitation, is a matter of much consequence. The fact that droughty conditions sometimes occur during the autumn and spring militates against a maximum realization of the husbandman's efforts, and to offset which much interest is taken in sub and surface irrigation.

"The availability of ample water supply is obvious, and many progressive fruit and vegetable growers have provided for artesian wells, thereby anticipating the ill effects of anti-periodic dry spells. The artesian water supply, usually alkali, is abundant at a depth of from one hundred to five hundred feet, and it is used to succor citrus fruits, melons, vegetables, strawberries and other products of winter and spring growth.

"The state is of such longitudinal configuration that it may experience a drought over one portion, while precipitation may be well distributed and heavy over other portions. The seasonal precipitation for the section is: Winter, 10.81 inches; spring, 9.61; summer, 20.83; autumn, 12.47; and annual, 53.72 inches. The distribution of rainfall varies with the geographical location of the section considered, as well as for the month of the year. During the summer months fully three-quarters of the precipitation occurs in the day time, usually in the afternoon as thunder showers. These showers rarely continue into the night, at the beginning of which the clouds disappear and a nocturnal temperature of sixty-eight to seventy degrees follows. As winter advances the night and day rains are more evenly distributed, the preponderance, however, is always during the day.

RAINY SEASONS

"About fifty per cent of the annual rainfall occurs from June to September and, as a rule, there is a progressive increase from May to September. There are two well defined rainy periods. The major maximum occurs generally in September, except in the northwest portion of the section, where it takes place in July and August. A less marked secondary period sets in with December and terminates usually in March. The first rainy period is due to the convectional activities of summer, together with the approach of tropical disturbances from low latitudes. The second rainy period is in consequence of the south and west sweep of continental disturbances as they move across the country. April and November are the driest months. Dividing the year, however, into two seasons—wet and dry—the former embraces the months from May to September inclusive, and the latter from October to April.

"Although the annual precipitation is large, the porosity of the soil over most of the section is such that seepage is greatly facilitated, which, in conjunction with evaporation, results in the rapid loss of moisture. Very little moisture is stored in the soil, excepting in the northwestern interior counties, where the subsoil is of a clay texture, but the loss is largely offset by a high percentage of rainy days. Snow in measurable quantities occurs over the extreme northern portion of the section during long intervals of years.

WIND MOVEMENT

"High winds may be expected, particularly on the coast, during the late summer and autumn, as tropical disturbances move northward, but storms of severity are of a restricted area and by no means of yearly occurrence.

"From autumn to spring the prevailing winds are from the north-northeast, becoming southwest to west during the rest of the year. The average hourly velocity is greatest, as a rule, from January to April.

"The percentage of relative humidity is highest in September and lowest in April; in fact, beginning with October and continuing until late spring, the asceptic properties of the air are favorable. The late autumn, winter and spring months constitute the dry season in Florida, which considered in connection with moderate temperatures, make possible an out-door life—a priceless boon to thousands upon whom may have fallen the bane of physical ills.

SOUTHERN FLORIDA

"The territory embraced in the section of Southern Florida, comprises that portion of the peninsula lying south of the twenty-ninth parallel. It includes about twenty-eight thousand square miles, with a population of about six to the square mile. The upper portion may be regarded as the beginning of the semitropical section of the state. The physical features of the district present no radical contrasts, as the elevated portions barely reach the dignity of hills. In this district may be found nearly every variety of soil, from the sandy pinelands of the coastal region, to those of darker hue and great fertility in portions of the interior. Interspersed throughout the district are numerous fresh water lakes and sluggish streams. The soil is adapted to the growth of all agricultural products indigeneous to the state, and in addition as a consequence of latitude and elevation, many varieties of fruits not to be found elsewhere in the United States, save possibly in sections of California, have been successfully introduced. Probably four-fifths of the citrus crops and all the pineapples of the state are grown in the district.

"The temperature is the most important element entering into the climate of the district, because a large percentage of the products grown are subject to serious damage by low temperatures. It should not be overlooked that the stations near the coast or in the vicinity of large bodies of water, have more equable temperatures, that is, they are somewhat warmer in winter and cooler in summer. As might be expected from the altitude and latitude, the range of temperature is unimportant, and though the summers are long, the extreme heat even at stations in the southern portion of the district, is rarely one hundred degrees. During the warmest part of the day atmospheric circulation is most active, the winds sweeping across the peninsula from the ocean or gulf and thereby mitigating, in great measure, the disagreeable sequences of warm days and high humidity. The warmest weather occurs during July and August, when maximum temperatures of one hundred degrees, or slightly more, may be recorded at stations in the interior. The mean summer temperatures range from about eighty to eighty-two degrees, continuing about eighty degrees during September in the southern portion. The October average is from six to eight degrees cooler than September. The mean temperature continues well up in the sixties during November, but in December and January the average is sixty or slightly below in the northern portion.

"The lowest temperature ever recorded in the district was fourteen degrees at Inverness, in February, 1899. Years of wide-spread disaster to fruits and vegetables were January, 1886, December, 1894, and February, 1895 and 1899, which comprehend the extreme conditions that have prevailed since 1871. Authentic data, however, antedating 1871, show that severe cold waves occurred in 1835 and 1857.

FROST LINE

"Frost may be expected over the upper and central portions of the district from the latter part of November to March, inclusive, rarely severe, however, before December and January, and it is not infrequent that winters pass without damaging frost; and such is the rule over the southern portion of the district. It may be well to add that the 'Frost Line' probably extends to the southern limit of the Florida mainland under extreme conditions. The only portions of the section exempt from frost are the Florida keys—the islands jutting into the ocean and gulf from the southern borders of Dade and Monroe counties.

RAINFALL

"Although the distribution and frequency of rainfall are generally quite uniform, the records show wide ranges in the daily, monthly, seasonal, and annual amounts. The annual precipitation is greatest on the southeast coast, that portion of the peninsula being in or near the most frequent track of tropical disturbance.

"While the seasonal contrast of rainfall is not so pronounced as it is in some sections of the western part of the country, it indicates relatively dry and wet seasons. The period of greatest rainfall begins over most of the district in June and terminates with September, except on the southeast coast where owing to the frequency of tropical disturbances, the period of heavy rainfall extends into October. The dry season, when the monthly rainfall ranges from one to slightly more than two inches, sets in over most of the district in October and with little variation continues till May.

"During the wet months the amounts range from six inches to more than ten inches. The rainy days become more frequent as summer advances, culminating in a monthly average of from fifteen to eighteen days during the rainy period.

"During the summer and spring months the winds on the east and southeast coasts are from the east and southeast. During the autumn they are more northeasterly becoming northwesterly on the upper coast during a portion of the winter months. On the west coast they are northeasterly during most of the year.

"Severe storms of the West Indian type are likely to occur occasionally; in fact, moderately high winds may be expected every year, as disturbances move northward from the tropics—mainly from August to October. Thereafter, however, the weather is ideal and storms of any consequence are the exceptions."

January normally is the coldest month of the year over the entire state, although the annual minimum temperature has occurred most frequently in December and the lowest temperatures ever recorded have come in February. The daily minimum temperatures throughout the year occur almost invariably about sunrise; the daily maximum in winter comes about 2 P. M.; in spring and late autumn, at 1 P. M., and in August and September very near to the noon hour.

EXTREME TEMPERATURES

In eighteen different months since 1829, has a temperature of one hundred degrees or higher, been recorded at Jacksonville. The highest readings—one hundred and four degrees—were made in July of 1872 and of 1878. The lowest temperature, according to the records of the local weather station, was eight degrees above zero, which was reached in February, 1835. During the same month in 1899, the thermometer at this station recorded ten degrees, and in December, 1894, and February, 1895, the low mark of fourteen degrees was reached.

The earliest light frost of autumn occurred October 17, 1901, but the average date of the first light frost is November 8. The earliest killing frost occurred November 12, 1892, and on the same date in 1894, but the average date of the event is December 4. The average date of the last killing frost in spring is February 14, but it came as late as April 6 in 1891. Light frosts, doing little or no damage, have been known as late as April 28.

AVERAGE AND EXTREME TEMPERATURES

For the purposes of comparison and to give the mean monthly temperatures for different sections of the state, and also to show the extremes that have been recorded, the following tabulations have been prepared. The figures given in degrees and decimals, are based upon the observations of the United States Weather Bureau and cover a sufficient number of years to establish accurate normals.

Northeast Coastal Group, including observation stations at Jacksonville, St. Augustine and New Smyrna on the coast, and Huntington in the southeastern part of Putnam county:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
Average	56.5	58.4	64.3	68.7	74.7	79.3	81.0	80.6	78.5	71.7	63.9	57.6	69.6
Highest	89.	90.	95.	98.	102.	101.	104.	102.	99.	98.	87.	89.	
Lowest	15.	8.	26.	34.	45.	54.	62.	61.	49.	32.	25.	14.	

Northern Interior Group, including observation stations at Macclenny in Baker county; Lake City, Columbia county; Gainesville, Alachua county, and Ocala, Marion county:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
Average	55.6	57.1	64.7	68.5	75.6	80.0	81.4	81.4	78.6	70.7	62.7	56.4	69.4
Highest	89.	87.	97.	98.	101.	104.	104.	104.	101.	98.	91.	90.	
Lowest	15.	6.	24.	31.	40.	52.	60.	57.	47.	36.	20.	17.	

Northwest Coastal Group, including stations at Cedar Key, Stephensville, Taylor county; Newport, Wakulla county, and Carabelle, Franklin county:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
Average	53.8	56.5	62.4	67.4	74.7	79.7	81.4	81.1	78.2	70.4	61.2	55.2	68.5
Highest	85.	85.	90.	98.	97.	98.	103.	98.	98.	98.	91.	85.	
Lowest	13.	7.	25.	34.	39.	54.	57.	60.	48.	30.	25.	15.	

Northwest Interior Group, including stations at Madison, Madison county; Tallahassee, Leon county; Monticello, Jefferson county; and Marianna, Jackson county:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
Average	53.0	54.3	63.6	66.4	74.5	79.4	80.6	80.6	77.8	68.1	60.0	53.2	67.8
Highest	81.	84.	95.	97.	101.	100.	104.	103.	102.	99.	90.	89.	
Lowest	15.	-2.	22.	33.	42.	52.	57.	60.	50.	35.	23.	12.	

West Coastal Group, including observation stations at Brooksville, Hernando county; Tampa, Manatee and Fort Myers:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
Average	59.6	61.8	67.1	70.8	76.5	79.7	80.7	80.8	79.4	73.6	67.0	61.2	71.5
Highest	88.	80.	95.	98.	100.	100.	102.	101.	98.	96.	91.	86.	
Lowest	18.	16.	30.	38.	47.	58.	61.	64.	50.	38.	24.	17.	

Interior Southern Group, including observation stations at Orlando, Orange county; Bartow, Polk county; Avon Park, De Soto county; and Arcadia, De Soto county:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
Average	60.6	62.4	68.6	71.1	77.1	80.7	82.1	82.1	80.5	74.5	67.2	61.3	72.3
Highest	89.	90.	97.	99.	100.	100.	101.	101.	98.	98.	92.	92.	
Lowest	18.	19.	31.	32.	46.	58.	63.	60.	52.	38.	28.	18.	

East Coast Group, including observation stations at Merrit, Brevard county; Malabar, Brevard county; Fort Pierce, St. Lucie county; and Jupiter, Palm Beach county:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
Average	62.6	64.3	68.9	72.1	76.6	79.7	81.3	81.7	80.5	76.0	69.4	64.3	73.1
Highest	85.	88.	93.	98.	97.	97.	100.	100.	96.	97.	89.	88.	
Lowest	21.	22.	33.	39.	50.	59.	61.	64.	56.	47.	32.	22.	

South Coast Group, including stations at Marco, Lee county; Miami, Dade county; Flamingo, Monroe county, and Key West.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
Average	66.4	68.2	72.1	73.4	78.3	81.3	82.7	82.9	82.1	78.0	72.9	68.0	75.5
Highest	90.	88.	98.	94.	96.	100.	100.	100.	97.	96.	91.	91.	
Lowest	29.	29.	39.	46.	50.	61.	67.	60.	60.	39.	36.	29.	

RAINY DAYS

The average number of rainy days in each month—the days in which the rainfall was one one-hundredth of an inch or more—for some of the principal stations in widely scattered parts of the state are the following:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l Total
Jacksonville	9	9	8	7	10	13	15	15	14	10	8	8	126
St. Augustine	6	7	6	4	7	9	10	9	11	8	5	5	87
Lake City	6	8	6	6	7	10	15	13	10	5	4	7	97
Cedar Key	10	7	7	6	5	12	14	14	9	7	6	7	104
Pensacola	11	11	10	6	7	10	14	14	9	6	7	10	115
Tallahassee	6	8	6	5	6	9	15	14	9	4	4	7	93
Tampa	8	8	6	5	7	15	18	19	16	7	5	7	121
Fort Myers	5	5	4	3	7	15	16	14	13	6	4	4	96
Orlando	7	7	6	5	8	12	16	15	15	9	6	7	113
Arcadia	5	5	5	4	8	15	15	17	15	6	4	4	103
Jupiter	10	9	7	7	10	13	13	14	18	15	10	10	136
Miami	4	3	4	4	6	9	8	9	11	9	4	3	74
Key West	4	7	5	4	8	12	13	13	16	13	8	7	110

FLORIDA'S ANNUAL PRECIPITATION

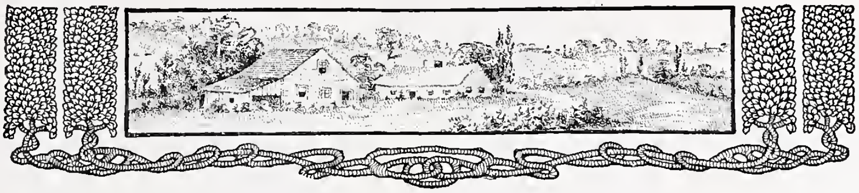
The normal and annual amounts of rainfall for the various sections named, located in every part of peninsular Florida are given in the table following, the results being noted in inches and decimals:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	An'l
Jacksonville	2.82	3.25	3.39	2.70	3.93	5.64	6.37	6.60	8.16	4.60	2.21	2.86	52.53
St. Augustine	2.72	3.00	2.94	2.75	3.58	4.96	5.50	5.82	6.81	5.08	2.25	2.64	48.05
Huntington	2.59	3.59	2.62	2.15	3.62	6.07	6.55	7.31	7.61	3.66	1.69	2.53	49.99
New Smyrna	3.20	3.05	2.82	2.23	3.50	5.51	5.05	5.65	8.32	6.12	2.80	2.59	50.84
Macclenny	2.84	4.41	3.89	2.80	4.59	5.63	7.89	6.70	5.39	2.77	1.52	3.20	51.63
Lake City	4.07	4.26	4.45	2.91	3.20	6.70	7.63	6.28	5.49	2.75	2.83	3.62	54.19
Gainesville	3.28	3.28	3.44	2.36	3.79	7.44	7.48	7.03	5.86	2.54	2.10	2.74	51.34
Ocala	2.73	3.19	2.89	2.01	3.38	7.69	8.19	7.54	7.35	2.69	1.61	2.37	51.64
Cedar Key	3.64	3.03	3.37	1.98	1.80	6.17	8.64	9.43	5.22	2.80	2.33	3.12	51.53
Stephensville	3.11	4.41	3.30	2.11	2.57	4.85	11.12	10.78	5.98	1.61	1.41	4.15	55.40
Newport	3.53	3.84	6.28	6.00	2.55	8.44	6.13	9.97	4.99	5.48	3.77	4.95	65.93
Carabelle	3.18	4.18	3.85	2.10	2.56	4.96	5.94	8.04	7.46	2.94	2.04	5.44	52.69
DeFuniak Springs	4.19	7.04	6.28	2.52	4.31	5.83	7.01	9.96	6.20	3.20	3.85	5.10	65.49
Madison	3.61	4.21	3.44	2.88	5.03	4.82	7.75	6.97	6.45	2.73	1.75	4.03	53.68
Tallahassee	3.71	4.59	5.02	3.00	3.66	6.37	7.90	7.40	5.13	3.22	2.54	4.58	57.12
Monticello	3.67	4.13	2.84	3.04	4.47	5.92	7.13	7.34	7.52	1.61	1.95	6.26	55.88
Marianna	4.16	5.34	5.49	2.16	4.50	4.61	5.94	5.49	6.64	2.48	2.46	4.00	53.27
Brooksville	3.12	3.49	2.48	2.34	3.33	8.45	9.58	9.33	7.40	2.51	1.59	2.35	55.97
Tampa	2.56	2.88	2.76	1.87	2.73	7.58	9.36	9.02	6.32	2.41	1.71	2.29	51.49
Manatee	2.78	3.01	2.71	1.91	2.92	7.80	10.84	9.16	7.57	2.71	1.62	2.37	55.40
Fort Myers	2.29	2.31	2.14	2.28	3.74	9.03	8.26	7.97	7.87	3.03	1.29	1.77	51.98
Orlando	2.54	2.78	2.34	2.04	3.81	7.46	6.77	7.36	8.14	4.44	1.44	2.16	51.28
Bartow	2.37	2.84	2.19	1.91	3.82	7.90	7.00	7.64	8.85	3.22	1.75	2.35	51.84
Avon Park	2.45	2.98	2.17	1.79	4.60	8.64	7.82	6.96	6.62	4.06	1.91	2.29	52.29
Arcadia	2.42	2.84	3.90	1.58	2.66	7.44	9.10	9.60	7.50	2.86	1.56	2.43	53.89
Merritt	3.05	2.70	2.52	2.87	3.76	6.92	5.50	5.42	7.94	5.72	2.30	2.52	51.22
Malabar	2.57	2.62	2.09	2.04	4.35	5.55	4.98	4.88	10.11	5.34	2.41	1.95	48.89
Fort Pierce	3.20	3.28	3.05	2.39	3.92	8.52	5.57	6.00	7.76	5.76	3.63	2.23	55.31
Jupiter	3.50	2.79	3.01	2.40	4.86	6.90	5.29	5.69	9.36	10.00	3.19	2.83	59.82
Marco	2.08	2.42	2.78	2.37	2.93	8.82	7.38	7.87	7.49	2.11	0.88	2.04	49.17
Miami	3.27	2.49	2.82	3.07	5.91	7.94	7.22	7.32	9.88	9.17	2.43	2.23	63.75
Flamingo	2.15	0.69	1.19	1.80	3.12	7.85	5.31	9.37	6.24	3.57	1.56	2.72	45.57
Key West	2.02	1.58	1.63	1.20	3.06	4.65	3.56	4.89	6.49	5.11	2.13	1.94	38.26

The average annual rainfall for peninsular Florida, as shown by the figures of this tabulation, is 53.25 inches.

CHAPTER IV

HEALTH



THE widely prevailing idea that the healthfulness of any locality, north or south, has an intimate relation to the climatic conditions has had, outside of Florida, an influence more or less prejudicial to its industrial development. The principle has been formulated by medical authorities substantially in these words: Climate and health have no connection beyond determining, in some measure, the classes of diseases which in any given locality most seriously affect the general healthfulness of that locality.

Continental United States is divided, as to climate, into two general sections, the north and the south. It is impossible to define the exact line that separates the two, nor is it necessary that any geographical demarcation be made. These sections, while having many conditions in common, are distinguished mainly by variations and extremes of temperatures, which in the north are greater and more trying than in the south. The physical ills most serious and which result in a larger percentage of deaths in this section, are the infectious diseases of tuberculosis, pneumonia, scarlet fever, measles, diphtheria, small-pox, puerperal fever, and influenza.

While these diseases are by no means negligible in the south, they affect somewhat less its general health, including that of Florida. The diseases prevailing most widely and most seriously in the southern section are those that are traceable to the animal parasites, like hookworm, malaria, tapeworm, and the round, or stomach worm. The conditions attending typhoid fever are much the same in all parts of the country.

The general conclusions to be drawn from this variable prevalence of the graver diseases, are that the death rate in the south is no greater than that of the north, probably it is somewhat lower, but that the general efficiency of labor in the south is more affected by the classes of diseases that prevail there.

HEALTH IN THE TROPICS

That a semitropical, or so-called hot climate, is not an unhealthful one, that it may have a death rate as low as the lowest in other and colder sections, is established by the often quoted example of Panama, which lies almost beneath the equator. Under the regime established and maintained by United States engineers in charge of the construction of the canal, it has a death rate that compares favorably with that of the most healthful localities in the world. These engineers have not changed by a single degree nor by a single unit of humidity the climatic conditions that they found. They have simply removed the conditions that induced disease.

The great city of Havana, with its four hundred thousand inhabitants, located in a tropical country amid surroundings most favorable to disease and epidemic, is one of the most charming and healthful in the world. During the five-year period from 1893 to 1897, inclusive, its deaths from yellow fever, malaria and small-pox aggregated sixteen per cent of its total deaths. During the five-year period, from 1903 to 1907, inclusive, the deaths from these diseases in the same city were seventy-two one-hundredths of one per cent of the total number of deaths.

Between these periods there was no change of climate, but in 1898 the Spanish-American war raged over the island and on its waters. When the clash of arms was ended and the Spanish had been dislodged from their last holdings in the Western Hemisphere, President McKinley placed in charge of reconstruction work a man of action and an educated physician, Gen. Leonard Wood. Professionally he recognized immediately the fact that sanitation was the first and most important work to be done. He summoned Col. William C. Gorgas, of the Medical Department of the United States Army. To him he gave the order to clean Havana.

Colonel Gorgas cleaned it. So thoroughly was it cleaned that yellow fever was wiped out. Mosquitoes were banished from the city. The accumulated filth was swept from the streets and alleys; the sewers were changed from surface ditches to tile drains, laid deep under the ground; avenues were paved and the magnificent Malecon, the hundred-foot wide drive along Havana's ocean front, was built. The death rate was reduced to about one-fourth of what it had been under Spanish domination. And what was done in Havana was repeated all over the island of Cuba.

When American occupation was ended the government of the new republic had the good sense to appreciate the value of the work accomplished by Colonel Gorgas and General Wood, and it placed in charge of the Department of Health of Cuba, Dr. John Guiteras. He was a Cuban citizen, educated in the United States and for some time a resident of this country. He has maintained the high standards of scientific sanitation established by the American officers, and he has improved in many ways the system committed to his administration.

FLORIDA'S MAJOR DISEASES

The four major diseases in Florida, in the order of their importance to the health of the state, are tuberculosis, hookworm, malaria, and typhoid fever. The nation-wide movement to eradicate the great white plague is strongly represented in this state, and earnest and systematic efforts are active for its obliteration. Florida has the disadvantage of having, not only its own tubercular patients to care for, but for years it has been the Mecca for those similarly affected from every part of the United States, coming here with the hope that the balmy atmosphere and the warm sea breezes will effect complete cures. The hope has been warranted in hundreds and thousands of cases where the disease had not progressed to the stage in which it would have been incurable anywhere. In many other instances the expected recovery failed of realization.

In the opinion of many of Florida's ablest physicians, the most serious menace to the general health of the state is malaria, but that it is generally prevalent throughout the state or that it has a strong hold in any locality, is a misapprehension of facts. The State Board of Health for many months has been working to solve the problem of its prevalence. The results from the first one thousand blood tests show an infection of about four per cent, a much lower rate than popular estimate would claim, and no greater than in other communities, where the disease is not considered to be unduly prevalent.

Not until recent years has the hookworm been recognized as a menace to public health and to the efficiency of labor. The infection, according to medical authorities, is not difficult to combat and to overcome. The greater danger from it lies in the difficulty of discovering the infection, after which its subjugation is speedy and not uncertain.

This insidious parasite is an intestinal worker. It is introduced into the human system largely from infected soils by the patient going without shoes, thus inducing what is known in the south as "ground itch." The victims are usually children and adolescents, of the age that usually or frequently "go bare-foot" in rural communities in the south, and the infection is much more common in the country than in the cities. Its effects are a general debility of the physical system and the tendency is toward a corresponding mental lethargy. The ultimate results are a large reduction of labor efficiency and of all effort, and a weakening of the physical system so that other diseases attacking the victim become more than twice as destructive in their effects, as in patients who have not been thus incapacitated to resist disease.

Although hookworm infection is sometimes given as the cause of death, it is the opinion of those who have studied it that it is never directly fatal. Its prevalence in Florida has been at least partially indicated by the investigations of the State Board of Health, which through its agents has examined six thousand children in the rural schools in the central part of the state. The result of this study showed an average infection of fifty-two in each one hundred of these pupils. The board has planned a systematic canvass and treatment of the cases that have been and will be discovered, which will largely reduce the extent of the malady and guard against reinfection. It is not among the probabilities that it will long threaten the general health of the state nor that of the south.

DEATH RATIOS

It is usual to summarize the healthfulness of a city, state or larger section by the statement of its death rate—the number of deaths occurring each year in each one thousand of its population. For Florida such a statement is impossible, exactly as it is in at least twenty-seven other states of the Union, and for the same reason —it has no reliable data upon which to base even approximately accurate figures.

Florida is not included in the registration area recognized by the United States Census Bureau, which accepts no figures regarding the vital statistics of any city or section which are not proven to be correct within ten per cent. It is provided that individual cities, located within states that are not included in the official registration area, may be excepted and their records accepted. Florida has two such cities—Jacksonville and Key West—which are in this area, although the state itself is not so listed.

Of the forty-eight states in the Union, only eighteen, by the adoption of adequate registration laws, have qualified and have been included in this official list. They are California, Colorado, Connecticut, Indiana, Maine, Maryland, Massachusetts, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington, Wisconsin, and Michigan. Only one so-called southern state, Maryland, is included in the number. Virginia has recently adopted a health registration law, which after its efficiency shall have been tested to the satisfaction of the Federal health authorities, will qualify it for the honor roll.

GATHERING STATISTICS

Twenty-seven other states have failed to establish and maintain systematic provisions for recording, even within approximate accuracy, their vital statistics. It is presumable that all of them have found difficulty in devising plans to secure reliable data. Florida's State Board of Health in its efforts to meet the problem, has discovered two elemental facts:

First, that these statistics can not be secured without paying for them.

Second, that whether paid or not, physicians can not be depended upon to furnish these records complete or accurate.

Acting upon these fundamental facts the Florida authorities have considered a plan to be enacted into law, by which one person shall be appointed in each county who shall be held responsible to gather these records; that such person shall be paid from state or county funds for each item reported; and that the refusal of a designated relative of a deceased person or of a new-born child, to furnish the required information at the request of the county agent, shall make him guilty of a misdemeanor and shall subject him to punishment accordingly. It is expected that a law embodying these features will soon have a place in Florida's statute books.

FLORIDA'S DEATH RATE

The records of vital statistics in the two Florida cities included in the registration area are the only figures on health matters recognized in Florida by the federal health authorities as being reliable or correct. An estimate for the entire state based upon such figures would be manifestly unfair. Florida's population is essentially rural, seventy per cent of its permanent residents living upon farms and in towns of less than one thousand population. While certain diseases in this state, as in other states, are more prevalent and more serious in their results in the cities, their ravages are partially counterbalanced by other maladies that prevail in the rural districts. It is an accepted fact that the death rates in these country disctricts are higher than in the cities where medical skill and general sanitary conditions are more favorable to successful treatment, but the exact amount of this difference is difficult, even impossible, to establish upon present knowledge of facts.

It is also evident that the general health of different cities must vary within somewhat wide margins, according to the varying locations, whether on the seaboard or in the interior and according to differing local conditions and the efficiency of local health boards, where such boards exist at all.

JACKSONVILLE'S DEATH RATE

The records of disease and death in Jacksonville, Florida's largest city, for the year 1912, are given as typical, to a large degree, of the conditions that are met and combated in this and in other southern states, in the efforts to reduce the ravages of disease. They suggest, at least, the problems that may be peculiar to the south which the medical profession and scientific sanitarians encounter in this great section.

Two serious elements in these problems are that a rapid growth of the city has prevented the extension of the water and sewer systems into the newer residence districts, especially into those occupied by the poorer classes of citizens. This has necessitated the use of the open closet with all its attendant ills. And this condition is met in every southern city that has a large and rapidly increasing population.

Another cause of a high death rate is the ignorance of proper sanitation among the negro race, which constitutes about one-half of the population. The colored people are attended almost exclusively by physicians of their own race, who with rare exceptions are not highly educated in their profession. These physicians knowing some of the characteristics of the race, frequently refuse to answer professional calls unless they receive their fees in advance. A result of this lack of credit is that nearly one-half of the deaths reported among the colored population of this city, occur without any attending medical adviser. The same statement applies generally throughout the state.

The number of deaths recorded in Jacksonville during the year 1912 was 1,276, of which 234 were of non-residents, meaning those persons who had lived in the city less than six months immediately prior to death. The death rate indicated by these figures was 18.1 for each one thousand, or 14.8 for each one thousand of the resident population. This resident population was divided between 35,293 white and 34,901 colored persons. The death rate for the whites, including non-residents, was 14.1, and for the negroes 22.2, for each one thousand, and this variance was a direct result of the varying sanitary conditions surrounding the two races in their living places.

RELATION OF RACE TO DISEASE

The more important causes of death occurring in Jacksonville during the year 1912, and the relative mortality rate among the two races from these diseases for the five-pear period ending with 1912, are shown in the following tabulation.

Causes of Death.	Number of Deaths in 1912.		Average Death Rate for Five-year period.	
	White.	Colored.	White.	Colored.
Typhoid (resident)	1	2	6.45	5.42
Malaria	5	10	1.72	8.03
Measles	2	0	.59	.24
Whooping Cough	0	2	.32	1.48
Diphtheria	1	3	.77	.33
Influenza	2	8	.51	.59
Tuberculosis (lungs)	34	102	13.35	36.64
Venereal Diseases	1	31	1.06	6.91
Pneumonia	17	43	8.83	16.21
Diarrhœa, under 2 years	18	25	5.27	8.00
Diarrhœa, over 2 years	5	7	4.75	5.39

From this exhibit it will be noted that tuberculosis leads in the numbers and percentages of deaths. Under conditions existing in Jacksonville, and to some extent in other southern cities, they are charged with many deaths from this disease that do not properly belong to them and that increase largely the number of deaths occurring within their respective jurisdictions. Every persons having lived in Jacksonville for half a year or more, is considered a resident in compiling the vital statistics. But many deaths from this cause each year are of patients who having contracted the disease elsewhere, have come to this city to linger for months and finally to die here.

It will be noted also that fifteen deaths are charged to malaria. Leading physicians of the south contend that this disease is rarely, perhaps never, a direct cause of death and that claims to the contrary are based upon faulty diagnosis. Investigations by the Jacksonville Board of Health during the year 1912, have gone far toward establishing the fact. It was discovered by the city health officer, late in 1911, that many of the small companies in which negroes are insured for sickness and death benefits, refuse to pay these claims in cases in which the cause of death is given as tuberculosis. Consequently, many colored physicians, to protect the claims of their patients or of the surviving relatives against these companies, substitute some other disease, usually malaria, for tuberculosis in filling the required certificates of death. Therefore, it would appear that in the tabulation given above, the number of deaths charged to tuberculosis should be increased and those in the column under malaria should be correspondingly reduced.

TYPHOID FEVERS

The fight against typhoid fever in Jacksonville has led to a deep study of the conditions that cause it. The city's water and milk supplies were eliminated from the list of possible or probable causes by a careful supervision, and it was found that the chief source of infection was the open and unscreened closets in the poorer residence districts occupied largely by the negro population, although it must not be understood that the colored residents are settled exclusively in these unhealthful surroundings. A large portion of the race is housed in homes of comfort and healthfulness and has a death rate almost as low as that of the whites. A careful screening of these open closets in the poorer quarters of the city brought a reduction in the number of deaths from typhoid fever in Jacksonville from forty in 1911, to eighteen in 1912.

Of the ninety-four typhoid cases reported to the city board of health in 1912, forty-three originated in Jacksonville and fifty-one were brought to the city and developed pronounced symptoms of the disease within one week after their arrival.

SMALL-POX

Due to a remarkably strong opposition in many sections of the state, Florida has no compulsory vaccination law. The result has been a series of small-pox epidemies in the state, none of them of serious extent. This disease in epidemic proportions naturally alarms the people of any community to the necessity of this precaution, and in the course of a few months the disease exhausts itself and dies out for want of material to feed upon. Its ravages are forgotten until the infection is introduced again from some other section or state, when the experience is repeated. This cycle is not peculiar to Florida; it is common in other states, as was illustrated in New York City itself, when in 1910 small-pox was epidemic in the Bronx. Jacksonville passed through an epidemic of the disease early in 1911, but with no deaths.

From this recapitulation of conditions governing the health of Jacksonville, the conclusion may be fairly drawn that this city is normally one of the healthful cities of the country. This is shown by the low death rate of the white population. That this low rate does not cover the entire population is properly attributable to two causes: first, the rapid extension of the residence districts has outpaced the possible extension of the water and sewer systems, and this condition is being remedied by the expenditure of large bond appropriations; and, second, the ignorance regarding sanitary conditions among the poorer classes and the lack of medical attendance have to an abnormal degree induced disease among them. A campaign of education and a forced obedience to rigid rules of sanitation, where education and persuasion fail, have already brought much beneficial change.

KEY WEST HEALTH RECORDS

The city of Key West is not typical of Florida as to its health conditions. The southernmost city in the United States, it is located on an island midway between the mainland of Florida and Cuba. Its climate is tropical, although the Gulf of Mexico surrounding it and the mighty gulf stream sweeping majestically by it, give a surprising coolness to the atmosphere and a remarkable uniformity of temperature through the entire year.

Its population of about twenty-two thousand includes from one thousand to fifteen hundred white Americans, thirteen thousand to fifteen thousand Cubans, most of them engaged in cigar manufacture, and the remainder is divided about equally between Bahaman and American negroes.

Owing to the formation of the underlying rock foundation of the key, there are no wells or other natural sources of fresh water for drinking and domestic uses. The supply is secured by evaporation or is brought from other places. With this heterogeneous population, composed largely of peoples careless of sanitary principles, and with no natural water supply, it is not surprising that the mortality rate of Key West is large when compared with other more favorably located cities. The average rate for the five years from 1907 to 1911, inclusive, was 21.4 for each one thousand. Yet here as the result of clean living and observation of sanitary rules, is a death rate among the white residents, including Americans and the better class of Cubans, of 13.5 for each thousand. The rate among the negroes was slightly above 24 to the thousand. The general character of diseases and their proportionate distribution between the races differ little from the facts already given for Jacksonville. These two cities in this respect may be taken as entirely typical of Florida as an entirety. In the classes of diseases prevailing through the state, there seems to be hardly an appreciable variation between the cities and the rural sections. The relative mortality of these diseases departs but little from the constants taken from the records of the Jacksonville Board of Health.

INFANT WELFARE

Public attention has been directed almost universally in the United States to the importance of the child to the commonwealth. In its efforts to conserve the usefulness of the infant for the future, Florida is abreast of the best thought of the time. In several Florida cities organized effort is directed to a supervision of sanitary conditions in the public schools, and to the proper medical and surgical treatment of the defectives discovered.

The subject of child labor, as it is encountered in many other states, is not of large importance in Florida, inasmuch as the number of manufactories and employments in which children find places are not an important feature of industrial life here.

An appropriation of state funds was made in 1911 to establish a hospital for indigent crippled children in Florida, and a further appropriation was made for the maintenance of the institution. The hospital has not yet been erected and the patients are cared for elsewhere until this institution can be erected and equipped. The demand upon the maintenance funds has exceeded its capacity, but it has been generously supplemented by liberal private citizens and the useful work has not been curtailed.

MAIN OFFICE AND LABORATORY OF STATE BOARD OF HEALTH AT JACKSONVILLE

The state also maintains at St. Augustine a well equipped asylum for the deaf, dumb and blind children.

THE STATE BOARD OF HEALTH

No story of health conditions in Florida, indeed, no history of the state itself, would be complete without a recognition of the work that has been accomplished by the State Board of Health. Jacksonville was visited in 1888 by the scourge of yellow fever. One person in every four of the entire population was a victim of the disease. Two of the remaining three fled the city to escape the plague. One person of every ten who had the infection died from it.

The first official act of Gov. Francis P. Fleming, who came to the executive chair of Florida in January, 1889, was to call a special session of the Legislature to provide for the creation and maintenance of a state board or commission to have charge of health affairs. That board was duly organized and as its executive head, the health officer of Florida, Dr. Joseph Y. Porter was elected. He has filled the position for a quarter of a century and he has made the board one of the most practically efficient health organizations in the world.

For one hundred and forty years before the discovery, in 1900, by Dr. Walter Reed that the infection of yellow fever is mosquito-borne, Cuba and its capital city had stood as a constant peril to Florida and to the United States. For fifty years the average of deaths in Havana alone from the loathsome disease, had been two each day. Florida extends five hundred miles nearer to that city than any other part of the United States. It has constant and intimate commercial relations with it, and it was due to this circumstance that Florida had become the natural entryway for the disease into this country, certainly an important one.

Five years after Doctor Reed's discovery, the Florida State Board of Health had the opportunity to try out the management of yellow fever according to the new declarations of science and to give the final test to the theories that had led to the world's emancipation from the disease. When the time came, Doctor Porter and his board demonstrated for the first time on American soil that the pestilence could be controlled and stamped out by the careful and scientific isolation of infected cases. The spread of the disease was prevented in three threatened epidemics at later periods, and instead of continuing as a menace to the rest of the nation, Florida was made a bulwark of protection against the infection from the West Indies and the South and Central American countries.

ARBITRARY AUTHORITY VESTED IN HEALTH BOARD

The law that created Florida's Board of Health gave it the sole power to establish and maintain quarantine. It gave to its rules the force of enacted law, making its authority ultimate throughout the state in matters affecting health conditions. It is doubtful if any American state has ever before or elsewhere delegated such unlimited authority to any body of its own creation. Never has this power been abused, but on several occasions it has been exercised, even to the resistance of Federal authority interfering in matters that affected the welfare of the state.

The absence of such authority vested in a quickly-acting organization in other southern states, has left the establishment of quarantine in certain emergencies to the mob, which in times not far in the past, has enforced it with lawless and armed power, doing incredible harm to those communities and bringing vast harm to interstate commerce and intrastate communication, and in some instances defeating the purposes that it sought to accomplish.

The confidence manifested in the board of health by state officials and by citizens throughout the state, is marked evidence of its efficiency. The outbreak of disease as epidemic or beyond the control of local authorities, is reported immediately to the State Health Officer and his orders are obeyed implicitly and almost blindly by those whom they affect.

The operations of the board are financed from a tax of one-half mill levied upon all the assessable property in the state. This yields an annual income of about one hundred thousand dollars. The one thing lacking to secure the highest efficiency and usefulness of the board to the state and its people is the active and intelligent coöperation of these people. To secure this a campaign of education has been waged for years, and its beneficial results are being demonstrated in the constant betterment of sanitary and health conditions everywhere in Florida.

CHAPTER V

POPULATION AND GROWTH

INCREASING industrial prosperity is indicated by growth in population quite as accurately and almost as quickly as the thermometer shows variations of temperature. The converse of the statement would illustrate the fact with equal exactness that industrial opportunity invites and draws population and capital as they are needed for development. Nowhere has the fact been more fully demonstrated than in Florida.

Spanish occupation of Florida territory discouraged its industrial growth, although the early Castilian adventurers pronounced it "the richest country in the world." Two hundred and fifty years after Ponce de Leon landed for the first time on the shores of the new continent, the area now known as Florida contained a population of hardly more than seven thousand, most of them fighting men in the garrisons at St. Augustine and Pensacola. This total makes no count of the native Indians remaining at that time. At the same period the English settlements along the Atlantic coast, as far north as Cape Cod, most of them dating their beginnings less than one hundred and fifty years before, numbered three million souls.

As Spanish control gradually lost its hold upon American territory, prosperity and increasing population followed. With its temporary return, the settlers abandoned this for other sections more favored politically. With the final repression of Indian aggressions, opportunity in Florida attracted an increasing population, and when the immediate effects of the Civil war had been overcome, the real dawning of prosperity smiled upon the state and uncovered its resources to the world.

DECENNIAL ENUMERATIONS

The population of Florida has shown large increase at each decennial period since the state became a part of the United States. The following tabulation indicates the various enumerations by the Federal Government, also the density of population—the number of persons to each square mile of land territory—at each ten-year period.

YEAR	POPULATION	DENSITY
1830	34,730	.6
1840	54,477	1.0
1850	87,445	1.6
1860	140,424	2.5
1870	187,748	3.4
1880	269,473	4.9
1890	391.422	7.1
1900	528,542	9.6
1910	752,619	13.7

The percentage of increase of population from 1890 to 1900 was 35; between 1900 and 1910 it was 42.4, a percentage greater than that of any other southern state for the same period and greater than that of any other state east of the Mississippi river. But the increase during the latter decade was not uniform throughout the period, as almost two-thirds of it came between 1905 and 1910. Estimating the increase of population since the enumeration of 1910 as the ratio which prevailed during the last five of the ten years, the population of Florida at the close of the year 1913, was approximately 850,000. But the ratio of growth in population during the first one-quarter of the present decade has been greater than at any time during the previous history of the state, and it is a safe prediction that by the next published census report in 1920 Florida will have in excess of one million inhabitants.

FLORIDA'S POPULATION DENSITY

By the census of 1910 Florida, the twenty-first in the list of states in area and the second of all east of the Mississippi river, ranked thirty-second in population and thirty-seventh in the density of its population. By that enumeration Florida was shown to have a permanent population of 752,619, scattered over a land territory of 54,861 square miles, or 35,111,040 acres. By these statistics the average density of population was 13.7. Eleven states, by the same census, had more sparsely settled territory. These were North Dakota, South Dakota, Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, and Oregon.

Comparing Florida with some of the more densely populated states,—if this state had the density of population equal to that of

Ohio, it would have 6,419,000 inhabitants; if it were equal to that of Massachusetts, it would have 22,976,000; if it were equal to that of Rhode Island, it would have 27,897,000 and were it as thickly settled as the District of Columbia, it would have more than three hundred millions, or three times the present population of the entire United States.

SECTIONAL DISTRIBUTION

Still using the Census Bureau reports of 1910 as a basis, the distribution of Florida's population shows somewhat remarkable results as to the settlement of various sections of the state. The sixteen counties west of the Suwanee river cover 14,468 square miles, an area equal to that of Massachusetts, Connecticut and Rhode Island combined. This western section contains approximately twenty-six per cent of the area of the state and 238,902 inhabitants, or thirty-two per cent of its population and has an average density of 16.5.

Middle Florida contains twenty-four counties and covers an area of 22,995 square miles, greater than the combined area of Delaware, Maryland and New Jersey. It includes 42.3 per cent of the land surface of the state and a population of 440,525, or 58.5 per cent of the enumeration of 1910, giving a density of 19.2 persons to the square mile.

The vast area of Southern Florida, including the Everglades, covers the seven counties of Manatee, De Soto, St. Lucie, Lee, Palm Beach, Dade and Monroe. Its area is 17,398 square miles, greater than that of New Hampshire and New Jersey combined. It contains 73,222 inhabitants, or 9.5 per cent of the state's population, with an average density per square mile of 4.2 persons.

URBAN AND RURAL POPULATION

Florida's distribution of population in cities and rural districts establishes the fact that it is essentially an agricultural state. The urban population in 1910 was 267,867, or 34.5 per cent of the total, which resided in cities of more than one thousand population. Fifty-five cities in the state had a population exceeding this figure; twenty-eight had more than two thousand; twenty-one had more than three thousand; twelve had more than four thousand, and ten had more than five thousand each. These ten cities, in the order of their population, were Jacksonville, with 57,699; Tampa, 38,524; Pensacola, 22,982; Key West, 19,945; West Tampa, 8,258; Gainesville, 6,183; St.

Augustine, 5,494; Miami, 5,471; Lake City, 5,032; and Tallahassee, 5,018.

The population of Florida is divided unequally between the two principal races. In the proportion to the total, the white race predominates and each succeeding census report shows it to be increasing in its percentage. By the census of 1880 the white race formed 52 per cent of the total population; in 1890 the percentage was 57; in 1900 it was 63, and in 1910 approximately 68 of each 100 were white. This increasing proportion of the white race is due not to decreasing numbers of negroes in the state, but to the fact that immigration from other sections of the United States and from foreign countries has been mainly of the white race both to the cities and to the farms and groves.

OUTSIDE INFLUENCES

The increase in population from 1890 to 1910 was more than 361,000, or 92 per cent. A large portion of this increase was supplied by the migration of agriculturists from the North and West and from other southern states. A considerable part of it also was to the cities from other sections of the country. Many communities in Florida have much larger proportions of residents born elsewhere than of native Floridians. This is particularly true of the younger cities, which are making most rapid strides in population and commercial enterprise. Few towns or cities in Florida can be characterized as typically Southern. Many of their more important business enterprises are dominated by capital and men from other sections, and to this class is due much of the vigorous development of the resources of the state.

Along the east coast of the state many of the fruit and vegetable farms are owned by a resident English population, and an appreciable percentage of the entire population of the state is British born. A colony of several thousand Greeks in the western part of the state dominate the Florida sponge fisheries and the race is represented in all the more thickly settled communities in the state.

The exact number of Indians remaining in Florida is uncertain, owing to the difficulty of reaching their abodes in the southern part of the state and also because of their distrust of the white race and their natural reticence, which make almost impossible the gathering of reliable statistics from them. It is believed that the two tribes of Seminoles in the Everglades include not more than four hundred men, women and children of all ages.

The negro race is the chief source of unskilled labor in Florida, as in all southern states. It is essentially the servant class for domestic service. To a small extent, individuals of the race have made some progress in the professions of medicine and as ministers of the gospel. Probably less than a score colored men are members of the Florida bar as practicing lawyers, and the success of these few has not been marked by high attainments. Many negroes have acquired comfortable homes and some degree of education. A few have accumulated wealth by business enterprise to the extent of a moderate independence. As a rule the negroes of Florida are more comfortably situated, more prosperous and contented than in any other southern state.

TRANSIENT POPULATION

The facts already given apply to Florida's permanent population. But the peninsular state has other hundreds of thousands who spend from three to eight months of each year in their winter homes in various parts of the state, but who are citizens of northern or western states or of foreign countries. With the approach of winter's cold they come regularly each year to Florida, open their homes here and remain until the following April or even July. Many of them come merely to escape the severities of other climates, but an increasing number have large business investments and interests in the state; they own and cultivate great citrus fruit groves or truck farms, from which they receive substantial returns in the early northern markets.

The number of such semi-transient citizens, many of whom pay taxes upon large and valuable properties in the state, is difficult to estimate accurately, but records preserved and formulated by the great transportation companies entering the state, make the number of these annual visitors not less than two hundred thousand.

The opening of the tourist resorts, great and small, throughout the state about the first of December, marks the beginning of a tremendous influx of visitors, which reaches its highest tide in January and February and continues until April. It brings into the state every year from two hundred thousand to three hundred thousand tourists, who remain from a week to three months. These with the visitors who own property and make the state their home for practically one half the year, swell the winter population of Florida by at least half a million persons.

CHAPTER VI

FLORIDA'S SOILS

THE soils of Florida offer a subject for extended discussion. In variety they surpass those of any other section of the United States. Like every other state, Florida possesses fertile lands and lands that are profitless for agricultural purposes. In some localities the good and poor lands lie in close proximity.

The geological history of the peninsula doubtless has had much to do with its variation of soils. The gradual sweeping down from the northern hill country of detritus has given to the northerly part of the state the same general clay soil that forms a large portion of the State of Georgia. This clay underlies much of the upper half of Florida, appearing at the surface, or overlaid from a few inches to as many feet, by a fertile porous soil, in which carbonate of lime, as small particles of sea shells, and accompanied by decomposed vegetable matter appears in large proportions.

The southern part of the state, evidently of later geological appearance above the level of the sea, is rich in the black muck of centuries of vegetable growth and decay, abundant in nitrogenous compounds and productive of rank and quick growth under the favoring glow of a semi-tropical sun and the absence of killing frosts.

CLASSIFICATION OF SOILS

The Department of Agriculture in an exhaustive discussion of the subject, prepared by Mr. Henry S. Elliot of that branch of the state service, has divided the soils of Florida into the following classification:

First, second and third rate pine lands, high hammock, low hammock, and swamp lands.

The pine lands cover much the larger portion of the state. To a casual observer these soils appear to be only sand, high in the percentage of silica, but closer examination shows a thorough mixture of carbonate of lime, in the form of disintegrated oyster shell, besides other mineral and decomposed and finely granulated vegetable matter.

First grade pine land in Florida is wholly unlike any soil to be found elsewhere. The surface is usually covered with a layer, several inches thick, of dark vegetable mould. Beneath this to a depth of several feet is a chocolate-colored sandy loam, mixed with limestone pebbles, the whole resting upon a substratum of marl, clay or limestone. The fertility and durability of this land in its natural condition have been tested repeatedly by the production of heavy crops of corn or cotton for twenty or more successive years, without the use of fertilizers and without any evidence of exhaustion.

The second class of pine lands includes the largest portion of the cultivable area of the state. They are widely and richly productive. Over a large portion the surface is undulating but rarely hilly. Beneath the surface is clay, marl, lime rock or sand. The substratum of clay is sometimes so far below the surface that it is not within the reach of plant roots, and this fact is argued as against the productive value of the land. This soil, which is a mixture of sand, disintegrated shell and decomposed vegetable matter, is essentially light, spongy and porous. This characteristic makes it conserve the contained moisture for the uses of vegetation. The tendency is toward a uniform distribution of this moisture, and when by evaporation or occasional drought the upper layers of the soil are dried out, capillary attraction brings the contained moisture from the lower levels within the reach of vegetation.

In the same way the natural plant nourishment of the soil and of applied fertilizers, which is held in solution, is made useful to growing plant life. The practical productiveness of this class of soil is much increased by the judicious use of fertilizers and by the addition of humus in the form of decomposing vegetable matter or of stable manure.

THIRD RATE PINE LANDS

Even the third rate pine lands, the most inferior of the three classes, are by no means worthless in the climate of Florida. This class may be divided into two orders; one comprising high, rolling sandy districts, sparsely covered with stunted growth of "black jack" and pine, the other embracing low, flat, swampy regions, which are occasionally inundated, but covered with luxuriant vegetation and usually with valuable timber. These lands afford excellent ranges

A BIT OF PINE HAMMOCK

FIRST CLASS PINE LANDS

for cattle besides being very valuable for their timber and naval stores products.

The better class, rich in calcareous salts, is particularly adapted to the growth of sisal hemp, a most valuable tropical product, as well as to other fibrous plants that have been introduced into Florida.

SOIL AND HEALTH

A feature almost universal in this state, especially among the pine lands, is in the topographical variations and it is to be found in no other section of the United States. These pine lands which form, as has been noted, the larger portion of the surface of the state, and which are universally health-giving, are studded at intervals with hammock lands of the richest quality. These hammocks are not low or wet; they rarely require artificial drainage. They vary in extent from a dozen acres to twenty thousand acres, with a probable average of about fifty acres to each such hammock. The natural timber growth is a mixture of pine, white oak, red oak, water oak, live oak, gum, bay, hickory, magnolia, cabbage palmetto and other hard woods, of which Florida has a larger variety than any other state in the Union. The high hammock lands differ from the low hammocks in that they occupy higher grounds, and in their generally undulating surface.

The high hammocks are in greatest favor in Florida. Their soil is a fine vegetable mould mixed with a sandy loam, often several feet thick, resting upon a substratum of clay or limestone. Such a soil combined with the climate of Florida, is extremely productive. It rarely suffers from an excess of moisture, nor is it affected by drought, as are other varieties of soil. Usually it requires only to be cleared and plowed to fit it at once for the largest productiveness of crops adapted to the climate. It is cultivated with less labor than many other varieties of soil, because its mellowness resists less than others the progress of the plow.

Large areas of high hammock lands are found in Gadsden, Leon, Madison, Jefferson and Jackson counties, underlaid with a stiff clay. They are of the earliest geological formation in the state, and it is claimed by many that they are the best lands in the state for the culture of cotton and for general farming purposes.

SWAMP LANDS

The swamp lands of Florida offer probably the most durably rich soils in the state. They are of the most recent geological formation and are receiving, year by year, constant accretions to their surfaces. They occupy the natural depressions or basins, which have been filled with gradual deposits of vegetable debris that has fallen where it grew, or that has been washed in from higher levels.

Naturally drainage is an indispensable preliminary for their successful cultivation, but when properly drained their remarkable fertility sustains the most exhausting crops with astonishing vigor for many successive seasons.

The greater part of Florida's swamp lands are in the eastern and southern parts of the state. The great Everglades tract is the most extensive area of swamp land in the entire country, covering millions of acres. Low hammocks, which are practically swamp lands, are not inferior to them in fertility, but are not considered so desirable. They are usually level, their soil is rich and always deep. Drainage is often necessary to carry off the water that is likely to accumulate in rainy seasons. They are particularly well adapted to the growth of sugar cane, as are the drained swamp lands, and with the climate, which permits the full maturity of this growth, have made this section the richest country in the United States for this product.

Lands of this description have produced six hundred gallons of syrup, or the equivalent of five thousand pounds of sugar, to the acre, surpassing the yield of the best Louisiana and Texas sugar lands. The advantage lies with the Florida lands, not because they are essentially richer, but because the later arrival of frost in the autumn permits the complete maturing of the cane, which often and usually is prevented by the more rigorous climate of the sister states.

POROUS SOILS FAVOR HEALTHFULNESS

At first thought it would appear that the immense areas of inland water surface and the abundant existence of vegetable matter in the hammock and swamp lands exposed to the heat of the semi-tropical sun, would induce a wide prevalence of malarial diseases. This class of affections does exist, but in a much milder form than in any of the more northern latitudes. They are usually in the form of intermittent fevers whose effects wear away as the individual becomes acclimated. The explanation seems to lie in the fact that the luxuriant vegetation of the middle and southern states passes through all stages of decomposition on the surface of the earth, giving out constantly its poisons to the air, but in Florida it is dried before it reaches the putrefactive stages of dissolution. Further than this, the soils of Florida are almost universally so porous and absorbent that moisture, an essential of offensive decomposition, seldom lies long on the surface. The atmosphere is constantly in motion, breezes from the gulf and ocean sweep the state without interruption, and Florida has more hours of sunshine each year than any other state in the nation. These influences combine to reduce to a minimum all possible injurious results from the decay of luxuriant vegetation or of animal matter.

SOIL SURVEYS

The United States Department of Agriculture has published soil surveys of several limited sections in the state. These have been issued with maps showing the distribution of the various soils, classified according to the nomenclature adopted by the department. The accompanying text affords valuable information as to the uses to which these soils may be most advantageously put. The work has been extended over only a small fractional portion of the cultivable area of the state, but as the necessity for detailed information regarding other sections shall demand, it is probable that this service will be extended more generously to Florida, as is being done in other states.

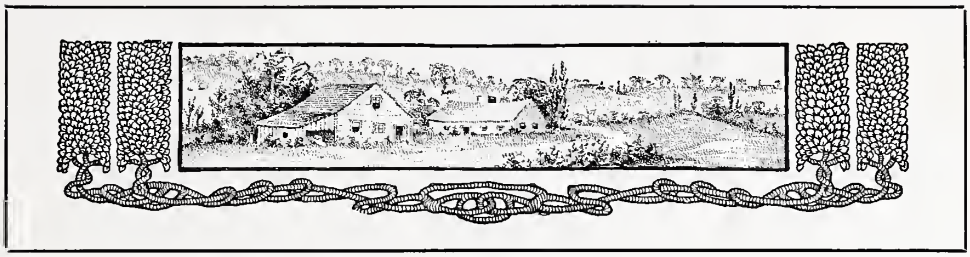
SELECTING LANDS IN FLORIDA

The settler coming to Florida from other and much different soil and climate conditions, is often perplexed to make a wise choice of lands on which to undertake farming operations. In view of these conditions there appears to be but one sensible course open to follow—it is to see the land before he buys. This is the advice given by all conscientious dealers in Florida's soils. Many such dealers practically refuse to sell their lands until they have been inspected in person by the buyer, or by some person in whose judgment he has full confidence. Much injury has been wrought in the settling of the state by blind purchases in which the prospective settler experienced serious disappointment when he began to work the land. There is little sympathy to be expressed for the person who will make the selection of his home and of land on which to win a livelihood without exercising the judgment that he displays in buying a horse, in which the possible loss would not be great.

The advice that should be followed is that the prospective buyer should examine his possible purchase of land carefully. Compare it with cultivated lands surrounding it. See what the land in close proximity produces under cultivation, and above all, ask questions, for reliable information is always available and every reputable dealer in Florida land prefers that it should be most thoroughly inspected before a purchase is completed. Do not buy from the map, but see the land itself.

CHAPTER VII

AGRICULTURAL CONDITIONS AND OPPORTUNITIES



AS a land of varied opportunity, Florida ranks among the first of all the states. The assertion is not made without a careful consideration of its full significance. As a starting point, Nature has been most liberal in its gifts; in the geographical location, which makes the peninsula one of the important gateways to the northern continent; in the large number of natural harbors which are of increasing necessity to the commercial development of the state and nation; in the immense deposits of phosphates, which already have made Florida's mines the largest source of the world's supply; in the vast forests of pine from which more than sixty per cent of the world's naval stores is produced annually; and in many other directions which unite to make the state potentially one of the richest in the nation.

But in no particular has the state been more generously favored than in its agricultural possibilities. For this reason it is essentially an agricultural section. Two-thirds of its population is classed as rural, which means that this proportion gains a livelihood directly from the soil. The percentage is largely increased if it is made to include the tens of thousands whose support comes indirectly through handling the products of the soil or in supplying the necessities of the rural community.

VARIETIES OF PRODUCTS

Stretching north and south through six degrees of latitude, from the St. Mary's river to the Straits of Florida, a large portion of its area is influenced directly by the tempering winds from ocean and gulf. Florida has a larger variety of soils and, consequently, a larger variety of indigenous and naturalized soil products than any other state. With the exceptions of those products whose perfect maturing requires a colder climate, most of the grains and fruits and vegetables that are raised in the northern states, are more easily and quite as profitably raised in Florida.

Of the grains, wheat seems not to reach perfection here. Of the fruits, apples have not been produced in competition with those of the north and west. With practically no other important exceptions, the soil products of Florida that have reached a distinct commercial value, include the entire list of agricultural and horticultural products of the other states, besides a large variety of citrus fruits which reach their highest perfection here, and a considerable number of edible products which so far have been grown nowhere else in the United States. Rice, tobacco, long-staple cotton here equal the best grown elsewhere. In the northern counties oats, barley and wheat (as a forage crop), grapes, peaches, and plums are profitably cultivated. Corn, originally a product of the southern states, is a paying crop in every part of Florida. Sugar cane reaches a more profitable maturity than in any other state, because the late occurrence of cooler weather in autumn favors the development of a larger percentage of sugar content.

FLORIDA FRUITS

The fruits of Florida represent varieties from every habitable portion of the earth. They may be divided into three classes:

I—Temperate and warm-temperate fruits: Peaches, pears, apricots, nectarines, figs, plums, grapes, Japanese persimmons, strawberries, dewberries, blackberries, mulberries and other small fruits that are found in sections further north.

II—Semi-tropical fruits: Oranges, tangerines, pomelo or grapefruit, pomegranates, loquats, limes, guavas, citrous roselle or tree cranberry, avocado or alligator pear.

III—Tropical fruits: Bananas, pineapples, cocoanuts, sugar apple, sapodillo, tamarind, cocoa plum, Barbadoes cherry, rose apple, sea grape, star apple, Surinam cherry and pawpaw or papava.

Nuts, especially pecans, and the Japanese varieties of walnuts and chestnuts are successfully grown in many parts of the state and are becoming an important industry, particularly in the northern and western sections of Florida.

Florida produces more varieties of grasses and forage crops than any other state. Cattle may be kept in prime condition on growing green pasturage through every month in the year.

FIFTY ACRES OF PINEAPPLES, INDIAN RIVER

Of the five hundred varieties of trees that Nature has planted in the continental United States, Florida has more than three hundred, a greater number than any other state, and of hard woods almost twice as many as any other. The list is being increased continuously through importations and acclimatization by the United States Department of Agriculture and by private enterprise, of trees and shrubs from every portion of the temperate and semi-tropical zones of the earth.

No honest and intelligent man will claim for the state that its soils are better than those to be found elsewhere. No assertion is made that these rich harvests are gathered without the preliminaries of hard work or without the generous use of fertilizers, for the spontaneous growths of the soil usually are not worth the gathering. But it is in the combination of soils and of climate that the greatest advantage over other sections is to be found. It is in the fact that climatic conditions favor the growth of vegetation in the southern one-half of the state through the entire year, and in the northern part the late arrival of autumn frosts permits the normal development of cultivated crops.

In the latter section the early opening of spring fosters early planting at the season when the north is buried under heavy blankets of snow and the earth is solid with frost. In the southern counties the time of harvesting the annuals, as of vegetables, may be regulated in large measure, by the time of planting, and practically all of these may be planted in any month of the year. It is this fact that times the ripening of strawberries for the northern Thanksgiving markets, and has tomatoes, cabbage, beans, cucumbers, lettuce, celery and a score of table vegetables ready for carload shipments from December to April.

NATURE FAVORS THE SOUTH

If a traveler were to make his journey from the arctic regions to the equator, he would find his progress marked by an increasing variety of soil products. As he journeyed southward he would note the swelling luxuriance and the greater perfection of vegetation. He would discover that Nature has been more lavish in her gifts of soils and of their products in the latitudes of sunshine and warm rains, and that in the tropics the tangles of trees and vines and the productiveness of the earth from which they spring, reach their highest perfection. The profuseness of production seems to be proportionate to its nearness to the line that divides the northern from the southern hemisphere. Florida is the most southern state in the Union, and measured by this law of Nature, it is the richest in its endowments for the agriculturist.

GREATER RETURNS FROM LABOR

The favoring conditions, typical of every warm or semi-tropical country, hasten the development of vegetation in Florida. Fewer months or weeks are necessary for the maturing of the annuals than in more northerly latitudes. This fact makes possible the growth of two or three, occasionally four, crops from the same land within a single year. The same conditions that favor the rapid and luxuriant development of plant life, favor also its insect enemies. The Florida farmer, and particularly the fruit grower, have these obstacles to combat. Scientific methods of fighting these pests combined with the rapid growth of vegetation, more than offset their ravages and make them no serious menace to agricultural prosperity.

The claim is a safe one that nature aids the farmer in Florida more generously than elsewhere. He wins larger rewards from his labor and a greater percentage upon his investments of money and time than is possible in any other agricultural community in the United States. Nature gives little by chance or accident, even in Florida, and the hope for the greatest development of the agricultural possibilities of the state, must be realized through intelligently directed labor. The slothful man may starve just as surely, if not as quickly, in Florida, as on the farms of Minnesota or Manitoba. Gold does not grow on trees in Florida ready for the mint, any more than in Maine or Oregon, but richer rewards for the same investment of labor await him who will make the investment.

AGRICULTURAL DEVELOPMENT IN FLORIDA

With these natural conditions it is interesting to analyze the actual development of agriculture in Florida. It must be recalled that although this section of the United States afforded the first asylum for European adventurers and discoverers, its material development has been retarded by various agencies to the extent that, in this respect, it is one of the newest portions of the country.

Statistics in themselves are dry and, to the average reader, uninteresting, but they present in concrete form valuable information for those who desire to make careful analysis of them. They afford also

BUNCH OF PECANS

COWPEAS—ONE OF FLORIDA'S RICHEST FORAGE CROPS

PEAVINE HAYFIELD

BLEACHING CELERY IN THE ROWS WITH PAPER

the basis for comparison of the subject to be illustrated with similar conditions in other sections, and for determining the amount and rate of change during a given period of years. For these reasons some figures have been used to illustrate the recent development and present conditions of Florida's agricultural resources.

FLORIDA'S FARM ACREAGE

The most recent statistics of the Department of Agriculture at Washington, give Florida's acreage as 35,111,000. Of this area, 5,254,000 acres, or fifteen per cent, are classed as farm lands, meaning lands enclosed as farms. Of this acreage, 1,805,000 acres are improved and the remainder, 3,449,000 acres, is in woodland or otherwise unimproved. In other words, five and one-tenth acres of each one hundred of the lands of Florida, which might be made productive, have been put under cultivation.

With the wasteful methods of cultivation and harvesting that obtain in many parts of the state, it is probable that less than five per cent of Florida's agricultural possibilities are being realized at the present time, yet the returns from its farms and groves and gardens approximated seventy million dollars in 1912, and the net value of its soil products from each acre under cultivation averaged more than twice that reported by the United States Department of Agriculture from any other state in the Union.

The progress of agricultural development in the state during the census period from 1900 to 1910, indicates a growth of astonishing rapidity which, however, has been accelerated since the close of the decade. The latest report from the Department of Agriculture at Washington, covering the State of Florida, is based upon the census figures of 1910. It is unfortunate that neither the state nor the United States has made provisions for an exhaustive compilation of industrial and agricultural statistics more frequently than once in ten years. But the facts gathered in the Thirteenth Decennial Census reports are sufficiently recent to denote accurately the forward movement of this development in Florida. With more than one-third of the succeeding census decade already elapsed, it is necessary to allow for corresponding growth by an even greater percentage than any in the past, to secure approximately accurate estimates of present conditions.

FLORIDA'S WEALTH IN FARMS

The total value of farm property in the state in 1910 was $143,183,000, an increase during the previous ten years of $89,254,000, or 165.5 per cent. In 1910 the land under cultivation was divided into 50,016 farms, with an average acreage of 105 acres. The average area of Florida farms has decreased by the showing of each succeeding decennial census since 1860, when it was 445 acres. The entire acreage in farms in that year was 2,920,000, valued at $22,889,000. The improved land in each farm in 1910 averaged thirty-six acres.

Florida has been heralded as the state of small farms. The exploiters of its lands in recent years have made strong arguments in support of the intensive cultivation of small areas. In its classification, the United States Department of Agriculture lists as farms all areas of three or more acres under one management, and all acreages under three acres from which at least two hundred and fifty dollars' worth of products were raised in 1909.

SIZE OF FARMS

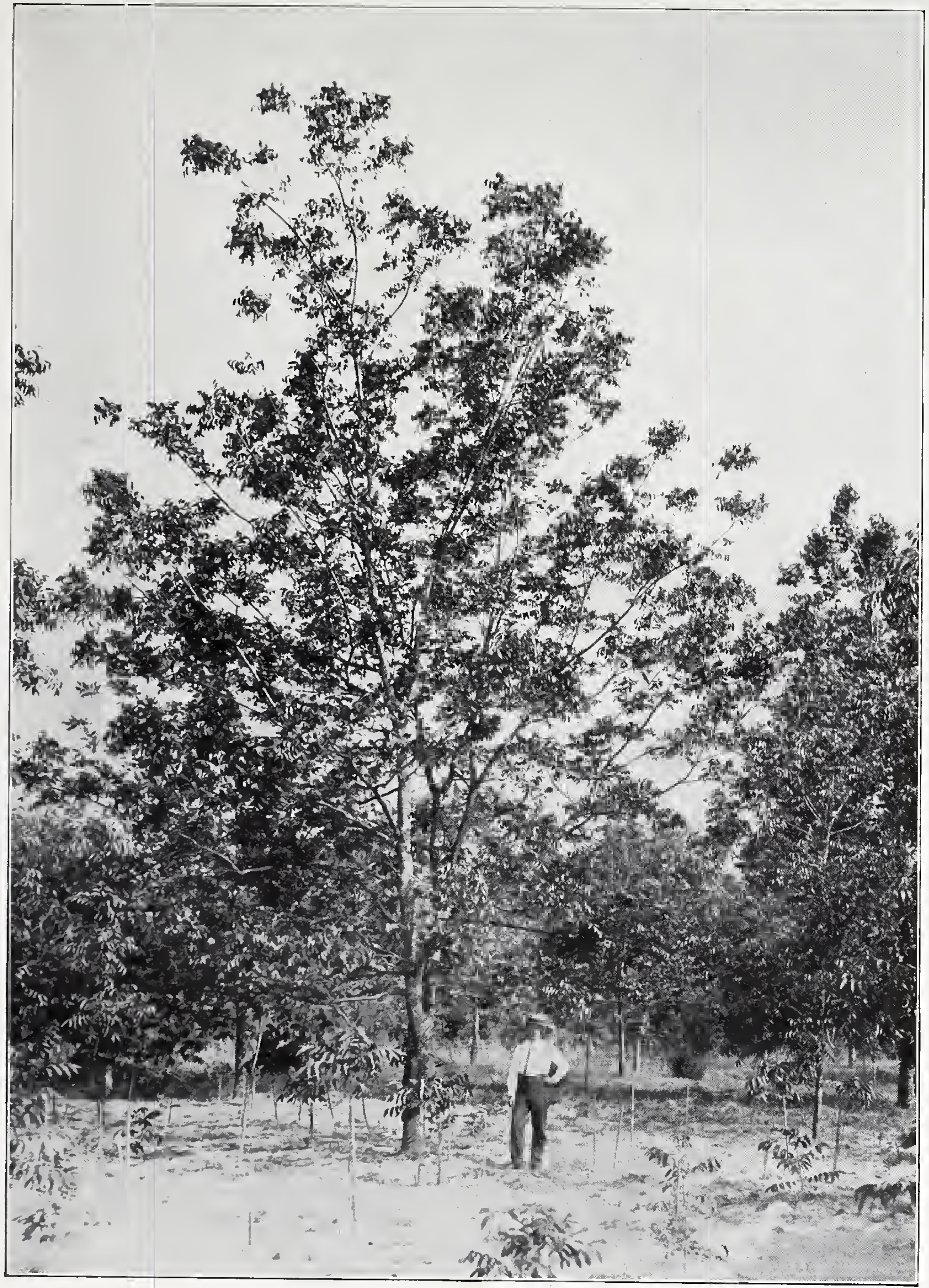
Of the 50,016 farms in Florida, 4,065 contained less than ten acres each; 22,188 contained between ten and fifty acres; 9,999 contained from fifty to one hundred acres; 12,723 contained from one hundred to five hundred acres; 670 contained from five hundred to one thousand acres, and 371 more than one thousand acres. To summarize, almost three-quarters of these farms contained less than one hundred acres each, and about two per cent contained five hundred acres or more.

FARM OPERATION

Of the 50,016 farms, 35,399 were worked by their owners; 1,275 by managers for non-resident owners, and 13,342 by tenants. The tenants on Florida farms constituted 26.7 per cent of the entire number of farm operators in the state, as compared with 45.9 per cent in the section known as the South Atlantic States.

Of the 5,253,538 acres classed as farm lands, 4,286,551 acres were operated by the owners; 280,741 by managers for others, and 680,246 by tenants. White owners operated 3,828,108 acres; negro owners, 458,443 acres; white managers, 270,787 acres; negro managers, 9,974 acres; white tenants, 385,958 acres, and negro tenants, 300,288 acres.

The average size of the farms operated by white farmers was



TEN YEAR OLD PECAN TREE

BUNCH OF FLORIDA COCOANUTS

slightly above 127 acres, compared with 52 acres operated by negroes, but the percentage of land classed as improved was more than twice as large under negro operators than under whites.

NATIVITY OF FARM OPERATORS

The nativity of farmers in Florida is a matter of much significance. Of these, 35,298 were white, all but 1,215 of them being native born, and 14,721 were non-whites, including twenty-one Japanese and Chinese and two Indians, the remainder being negroes. Among the foreign born whites, England, Germany, Canada, Sweden, Ireland, Scotland, and Denmark were represented numerically in the order named.

INDEBTEDNESS ON FLORIDA FARMS

A study of the indebtedness resting on Florida farm lands makes a favorable showing for the state. Of the number of farms operated by the owners, 29,614, or more than 85 per cent, were free from mortgage indebtedness, and 5,160, or about fifteen per cent, had such incumbrance. The proportion of debt-free farms in Florida has decreased steadily since 1890. Of the farms thus incumbered in 1910, the average value was $3,098, the average indebtedness being $652, or twenty-one per cent, and the equity in each, $2,446.

FLORIDA STATE REPORTS

The Commissioner of Agriculture of the State of Florida issues a biennial report at the first of each odd-numbered year. This time has been selected in order that the report may be submitted to the Legislature which, by law, convenes for a sixty-day session through April and May of such years. This report covers all agricultural operations and other matters under the jurisdiction of the Department. It gives the crop statistics of the state for the last previous even-numbered year.

It happens that the harvest season for many fruits and vegetables begins early in December and continues through several months into the following year. Other crops are planted and mature wholly within the calendar year, and it has been found convenient in preparing statistical information and for other purposes, to make the crop year begin with the first of July.

The report from which the following figures have been taken, covered the year 1911-1912. Extracts from this report have been used somewhat freely in order to give an idea of the variety of Florida's more important soil products, to note approximately the aggregates, and to furnish sufficient data from which valuable deductions may be drawn regarding the acreage productions and their values for each acre under cultivation. While no report could be gathered with absolute accuracy it would be impossible with the present machinery of the State Department, for the Commissioner to secure more complete or more reliable statistics. It is certain that the results presented in the report show less than the maximum and actual productiveness of the state, and that an uncertain but appreciable percentage may safely be added.

TOTAL VALUATION OF CROP PRODUCTS

Field Crops	$16,051,730
Vegetable and Garden Products	8,056,685
Fruit Products	9,689,774
Poultry and Poultry Products	3,527,286
Dairy Products	2,518,241
Miscellaneous Products	133,713
	$39,977,429
Livestock on hand, July 1, 1912	23,510,479
	$63,487,908

This total shows an increase of $6,775,000 in two years, as inventoried in the last previous report from the State Department of Agriculture. The value of livestock in this report includes more than the proportion that should be credited as entirely the product of the year, and the figures are, therefore, separated from those of the other land products.

FIELD CROPS

CROP	ACREAGE	QUANTITY	VALUE
Cotton, Upland	123,588	42,013 bales	$2,095,973
Cotton, Sea Island	117,001	28,071 bales	2,188,830
Corn	460,686	5,453,936 bushels	4,455,161
Oats	23,513	287,708 bushels	232,250

FIFTEEN YEAR OLD PECAN GROVE, ST. AUGUSTINE

HOW COCOANUTS GROW IN FLORIDA

CROP	ACREAGE	QUANTITY	VALUE
Sweet Potatoes	27,747	2,953,581 bushels	$2,398,257
Rice	557	14,737 bushels	22,609
Sugar Cane	9,475	67,846 bbls. syrup	920,693
Field Peas	8,165	76,885 bushels	149,456
Field Pea Hay	9,745	9,849 tons	180,894
Hay, Native Grasses	29,732	46,650 tons	516,351
Peanuts	96,695	1,534,736 bushels	1,630,275
Tobacco	1,572	1,444,626 pounds	586,607
Velvet Beans	28,314	320,930 bushels	598,815
Velvet Bean Hay	1,901	2,526 tons	46,673
Miscellaneous			12,575

FRUIT PRODUCTS

CROP	QUANTITY	VALUE
Oranges	4,769,312 crates	$5,665,415
Lemons	11,810 crates	32,763
Limes	35,417 bushels	61,770
Grapefruit	1,405,308 crates	2,684,525
Sugar Apples	2,703 crates	4,169
Avocado Pears	19,373 crates	53,730
Pineapples	355,658 crates	383,155
Bananas	27,061 bunches	18,633
Mangoes	26,559 crates	26,646
Guavas	56,172 crates	49,281
Cocoanuts	77,819 trees	8,441
Pecans	16,893 bushels	94,887
Strawberries	3,513,108 quarts	147,456
Pears	30,993 barrels	72,258
Peaches	178,566 bushels	225,576
Grapes	1,054,945 pounds	74,581
Grape Wines	20,354 gallons	19,968
Figs	16,534 crates	25,585

GARDEN PRODUCTS

CROP	ACREAGE	QUANTITY	VALUE
Onions	624	65,162 crates	$ 102,067
Lettuce	2,598	625,012 crates	818,307
Celery	932	420,394 crates	482,579
Peppers	1,062	250,918 crates	288,663

CROP	ACREAGE	QUANTITY	VALUE
Irish Potatoes	10,647	1,080,215 bushels	$1,640,882
Cabbage	2,307	193,729 crates	295,279
Tomatoes	13,213	1,752,194 crates	2,112,829
Squash	547	98,403 crates	133,183
Egg Plant	438	39,588 crates	39,981
Cucumbers	2,081	363,390 crates	344,423
Watermelons	15,724	6,895 carloads	511,417
Cantaloupes	4,444	280,551 crates	285,023
English Peas	261	12,045 crates	21,165
Beets	281	23,123 crates	35,210
Beans	6,297	768,300 crates	798,221

LIVESTOCK ON HAND, JULY 1, 1912

	NUMBER	VALUE
Horses	48,418	$6,009,142
Mules	32,352	5,396,601
Asses and Jennets	248	15,361
Cattle		
Oxen	9,320 yokes	292,997
Stock cattle	772,076	7,224,544
Thoroughbred stock	14,188	489,089
Cows kept for milk	39,621	1,215,842
Hogs	661,437	1,858,915
Sheep	114,501	287,699
Goats	43,998	43,854
Poultry	2,793,932	1,370,129

MISCELLANEOUS PRODUCTS

	QUANTITY	VALUE
Eggs	8,175,261 dozen	$2,157,157
Milk, used and sold	8,131,761 gallons	2,166,018
Butter, used and sold	1,133,887 pounds	351,964
Honey	675,718 pounds	72,363
Wool, spring clip	261,017 pounds	56,588

OPPORTUNITIES IN FLORIDA

The comparatively meager development of the agricultural resources of the state suggests the opportunities that exist on its acres for the energetic and intelligent farmer.

FLORIDA FARMER'S HOME

HARVESTING IRISH POTATOES

SWEET POTATOES—400 BUSHELS TO THE ACRE

HARVESTING CELERY CROP AT SANFORD, FLORIDA

Until within recent years Florida, in proportion to its population, consumed a larger aggregate of canned and preserved goods than any other state. Many fruits and vegetables that were raised in the state and shipped to northern markets at the time of the winter harvests, were returned in cans from northern manufacturers for summer consumption, and the consumer paid the freight both ways.

With the possibility of raising sufficient pork for its own needs and for large export, Florida imported immense quantities of bacon and other pork products. With the most extensive cattle ranges in the world, Florida today buys from western packers four-fifths of its dressed beef. Fresh milk and cream are brought under refrigeration from New York and other northern cities to meet the demands of the winter resorts at Palm Beach, Ormond, Miami and Tampa. Evaporated milk and cream have large consumption on the farms and in the cities of the state through the entire year.

POULTRY PRODUCTS

Eighty per cent of the poultry and eggs needed to supply the markets of the state are produced in and brought from Georgia, Alabama and Tennessee, while the comparatively few poultry raisers of Florida receive prices for their products in the home markets as high, or higher than those demanded in Chicago, New York and Boston.

The first Irish potatoes reach the northern markets in quantity early in April. They come from Florida fields and command large prices, yet consumers in Florida's cities pay even larger prices for the same vegetable in August and September than were received four or five months earlier for the home grown product.

The first vegetables and fruits that appear in the groceries in the east and north come from Florida truck growers, who receive at the rate of hundreds of dollars an acre for their produce, but it not infrequently occurs that the same varieties of table foods can not be obtained at home during the late summer and autumn months.

The list of such incongruities might be lengthened almost indefinitely. It would merely emphasize the existence of opportunity in the great Peninsular State for the farmer, the fruit grower and the poultry man.

SELECTION OF LOCATION

There is much to be said concerning the choice of lands and location by the new-comer to Florida. Several elements in the problem should be underscored. The development of the state, as of all new sections, has been made possible more by the establishment and operation of transportation lines, rail and water, than by any other agency. Some of the most fertile lands in the state have not yet been reached by these lines of communication and, accordingly, their actual present values as producing properties are small.

The question of proximity to local markets and the ready availability of shipping facilities to reach the markets beyond the limits of the state, is one of vital importance. The centers of population furnishing the greatest consuming capacity, naturally are the best markets and the nearness of such markets to the place of production reduces carriage charges. Every mile of distance from the market increases the cost of transportation and correspondingly reduces the earning power of the land, thereby indirectly lessening its actual and productive value.

Every mile of hard-surfaced highway enhances such value. Therefore, the agriculturist who is seeking a location in Florida, if he is to make a wise selection, has many things to consider. The most cautious and conservative will not trust such selection to others, but he will choose his land and the place of his home only after a most careful and thorough personal investigation.

CHAPTER VIII

THE CATTLE INDUSTRY

FLORIDA is essentially an agricultural state. From its soils and the products of its soils more than two-thirds of its annual wealth is produced. Two-thirds of its population are classed as rural, and two-thirds of the farms in the state are worked by their owners. Under such conditions it is natural that the raising of cattle should be one of the most important industries. It is equally certain that success in cattle raising is dependent upon the natural grasses and forage for this pasture.

Millions of acres of land through the southern and central portions of the state have been devoted in past years to great cattle ranges, whereon roamed hundreds of thousands of native stock, unaccustomed to the approach of man and unherded, according to the methods adopted in the western regions. Indeed, not many years in the past. the largest single owner of cattle in the world was a Floridian, and his herds ranged over hundreds of thousands of acres of wild lands in De Soto, Manatee and Lee counties. The gradual breaking up of these lands into farms and their ownership by individuals and corporations, have practically ended range pasturing in Florida.

The growth of native grasses on these acres afforded ample feed from March until the late autumn months. The winter season, unproductive of pasture, reduced the cattle to a condition bordering on starvation and in former years the annual loss from this cause was estimated as high as ten per cent.

It was to be expected that cattle raised under such conditions would not be equally profitable with those raised on the western prairies. According to the authority of a prominent cattle man in the southwestern portion of Florida, the cost of raising Florida beef for market was $1.50 per head. The 50 cents was for branding the calf; the dollar was the cost of cutting the animal from the herd and delivering it to the shipping point. The average price per head for such beef, three years old, was $15, leaving a net profit of $13.50. The average weight for such three-year old beef was 525 pounds, and it produced about forty-five per cent of this weight in dressed beef, or approximately 235 pounds for the carcass. But this ratio of profit from the herd was reduced by accident, disease and starvation.

CHANGING CONDITIONS

However, these conditions have been changed, or are changing very rapidly with the development of the state into farms, groves and plantations; and not many years will elapse before the ranges of Florida will be a thing of the past. The development of the state so far as this industry is concerned, must follow the course of change that has come in the western states. So long as Kansas, Nebraska, Dakota and Texas depended upon wild grasses for beef production, the cattle industry was uncertain. The native grasses provided sufficient feed to fatten the cattle for beef but not to carry them through the winter in good condition. Under range conditions, thousands of animals perished every year. As the population increased in these states, the large ranges were broken into small holdings. These states are now growing nutritious forage plants and are sending the finest beef to the market; they are producing great quantities of the finest butter. This, however, is not done with the native vegetation as a basis, but by the use of introduced and domesticated forage plants. In every country in the world, it becomes necessary to improve the character of vegetation before domestic animals can be developed to produce large profits in an extensive industry of this kind.

WINTER FEEDING NECESSARY

The argument is frequently advanced that the Florida climate is so mild that it is unnecessary to provide shelter or extra food for livestock in the winter. Unfortunately for this argument, it requires more than climate to make good beef. The vegetation that grows naturally in the pine woods is scanty and non-nutritious during the broken season of winter, and cattle cannot gain sufficient sustenance from it to maintain their condition, to say nothing of keeping up the natural gain in weight. Cattle on a range, therefore, are driven from the open country and flat woods during the winter, and congregate in the hammocks and along the water courses and lakes. These locations afford some shelter and variable amounts of forage, but there are not enough such locations for the cattle that run wild in the southern part of the state, and the result is a large mortality among them.

JERSEY STOCK ON FLORIDA FARM

CATTLE ON GREEN PASTURAGE IN JANUARY

The winter starving period so stunts the young animals that they never attain their normal size.

The entire cattle industry is in the process of remodeling, following approximately the example of the western states in which the industry is of large importance. The production of better cattle for beef purposes, the improvement of the native strains by crossing them with graded stock, and the consequent betterment of the product for home consumption of for outside markets, are the problem which is being worked out slowly in Florida. Another basis for this improvement is in the immense variety of forage plants and grasses which Florida possesses in an abundance unsurpassed in any other section of the country.

EXPERIMENT STATION'S USEFULNESS

The workers at the United States Experiment Station at Gainesville have been of inestimable value to the farmers and cattle raisers of this state in the development and propagation of these forage plants. They have produced varieties which furnish sufficient green feed through every month in the year. They have produced varieties of such luxuriant growth and nutritiousness, that more cattle can be fed and kept in good condition upon a given acreage here than by the uses of forage plants known elsewhere. They have been educating the farmers to the use of the silo, and to the idea that the careful feeding of cattle throughout the year, including the winter seasons, is an investment that pays large returns.

It is interesting to note and to study results of the experiments that have been made at the Gainesville station during the last twenty years. Among the crops belonging to the grass family are the Natal grass, which grows luxuriantly and abundantly throughout the southern half of the state; the Rhodes grass, introduced about 1905, which has been proven to be adopted to every part of Florida. In some parts of the state it has been grown in considerable areas, but the efforts at present are to secure sufficient seed for more extensive planting. Others are the Molasses grass, the Para grass and the Guinea grass, and have been shown to be adaptable to the various sections of Florida.

JAPANESE CANE

Japanese cane belongs to the grass family and is very closely allied to the common sugar cane. It is without a doubt the king of forage plants in Florida. It produces large quantities of green forage late in the fall, at the time it is most needed. It is a profitable food from December, since the amount of nutritive sugar content increases rapidly in the last weeks of its development. Twenty-seven tons of green matter in this cane have been produced on an acre of land which ordinarily would grow eighteen to twenty bushels of corn. The original stock of this cane was brought into Florida more than forty years ago. This first introduction gave only a suggestion of its possibilities, and better varieties were brought from Japan. The seed canes of eight varieties have been brought from Ceylon, which are now being tested out at the experiment station. All of these are easily adaptable to conditions in Florida, and from this propagation it is likely that Japanese cane will be extended all over the United States wherever climatic conditions favor its growth.

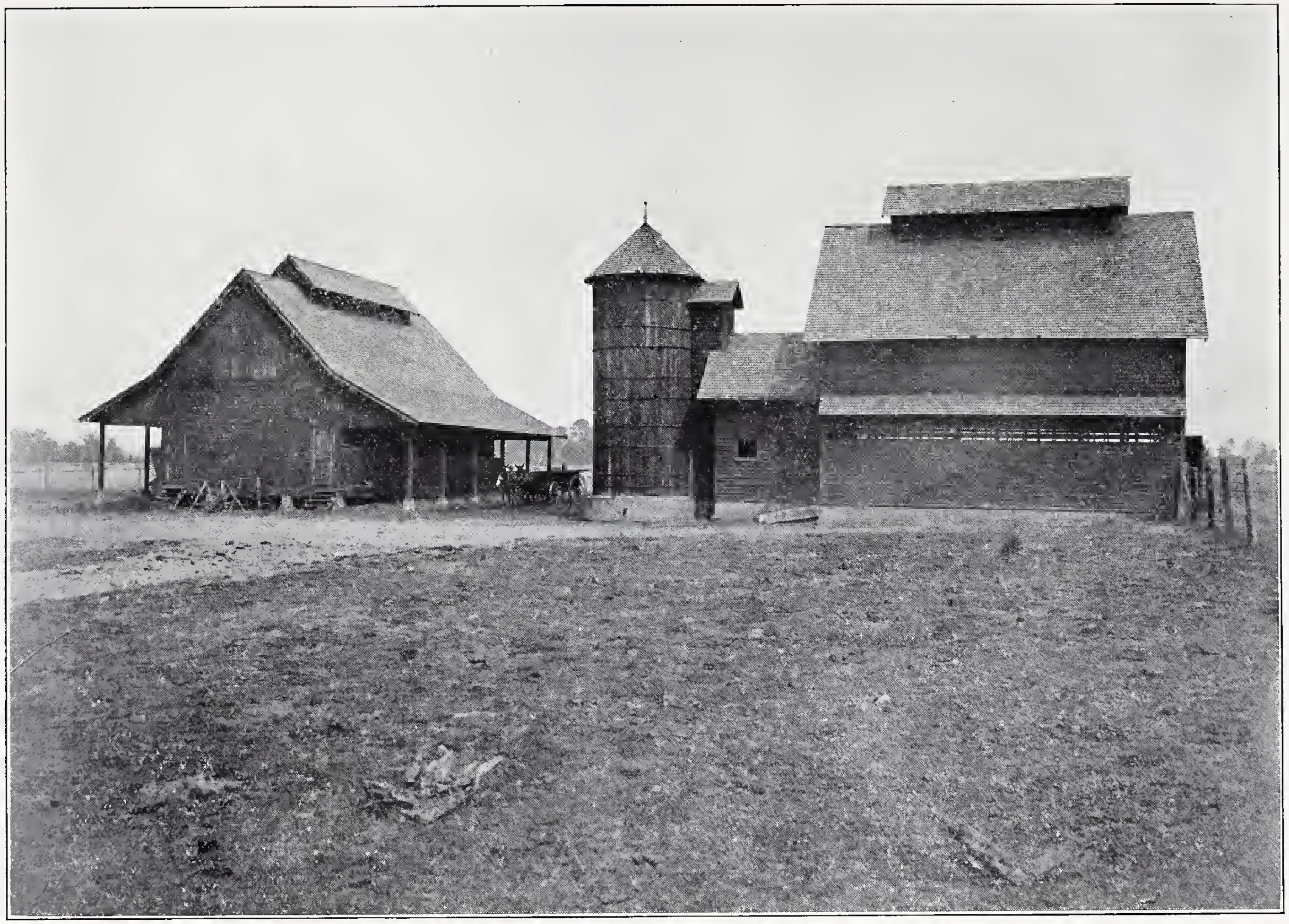
The experiment station has tested between thirty and forty varieties of alfalfa, the seed having been received from Peru, Turkestan, Mongolia and nearly all of the alfalfa-producing countries of the world. All these seeds germinated into vigorous growing plants, but failed to be sufficiently productive to be profitable. In other words, the conditions throughout most of Florida do not favor alfalfa as a profitable crop for pasture.

From eighty to one hundred varieties of soy beans have been tested out at the experiment station. A few of these produced vigorous growth, but they have not yet been proven practicable for the southern part of the state.

Nearly two hundred and fifty varieties of cowpeas have been tested. The crop has been grown for many years in the southern part of the United States with success. But the cowpea family is decreasing in favor in Florida, largely because other forage products, like the velvet bean, produce a larger amount of ammonia per acre at less expense.

VELVET BEAN

For nearly a quarter of a century the Florida velvet bean has been regarded with high favor throughout the southeastern section of the United States. Originally it was used as an arbor plant; then it was discovered that it was a good feed for stock and came into general use. It now stands seventh in the value of Florida farm crops. A good crop of velvet beans is worth from $30 to $40 per acre to the farmer. The beans themselves sell readily as seed for $30 per acre crop. The large value of the plant is in its power to



SILO AND CATTLE BARN AT FLORIDA EXPERIMENT STATION

take nitrogen from the air and leave it in the soil, which gives it an equivalent value of one thousand pounds of cotton seed meal as a fertilizer.

The Kudzu vine has been grown at the experiment station since 1907. Its great value is for hay production.

At least fifty other varieties of forage plants have been tested out at the experiment station, and the development of these forage plants has made a total of not less than a thousand different native grasses and forage plants among the resources of Florida.

The Peninsular State is located in that part of the country known as the "Texas fever belt," the section in which the cattle tick is more or less a menace to the cattle industry. Under state authority, acting through the State Board of Health, vigorous measures have been taken to wipe out this menace. It seems probable that within a few years the restrictions imposed upon the exportation of Florida cattle for beef and dairy purposes will be removed; and that the discrimination of from one and one-half to two cents per pound on live cattle will also be removed.

With all its favoring conditions for the raising of cattle, Florida imports about eighty per cent of its beef for home consumption. It buys its butter and cheese in the north, and when the full realization of the possibilities that exist in Florida shall be impressed upon capitalists, there should be no reason why cattle-raising, both for beef and for dairy purposes, should not place Florida in the lead of all the states.

CHAPTER IX

ORANGE CULTURE

FLORIDA is preeminently the home of the orange in the United States. Here the several varieties classed under the general description of citrus fruits reach their highest perfection; they contain the largest percentage of juice proportionate to their gross weight; they have the finest shipping qualities and they are excelled in flavor by the product of no other section of the United States or of the world.

In this discussion the citrus products are made to include the more than fifty varieties of sweet orange known to Florida growers, seventeen kinds of grapefruit, known also as pomelo, nine varieties of lemons, six or more of tangerines, sometimes called the "kid-glove orange," three of limes, besides kumquats, the citron and a few varieties which are not extensively cultivated and are almost unknown outside of the state.

The kumquat differs in many respects from other fruits of the citrus class, being small, usually not more than one and a half inches long with half that diameter. It is slightly acid to the taste and the skin, for the kumquat is eaten whole, lacks the bitter flavor that belongs to the skins of other fruits of the citrus class. It usually is grown on dwarf trifoliata stock not more than thirty inches high, although it has been grown on larger trees. It is probably an importation from China. The miniature tree is often used for ornamental purposes and Florida housewives make a delicious preserve from the fruit. So far as is known the kumquat has never been successfully budded on orange stock.

HISTORICAL

The introduction of the orange into Florida, if it be an importation, antedates European invasion of the peninsula. The early writers whose reports have been preserved, refer to the orange and speak of its excellence. It was known probably much earlier among the natives and it has been one of Florida's valued assets since history was first written about this section. There are many reasons to conclude that it grew here without particular care or cultivation in these earlier times and until comparatively recent years, and only since the Civil war has it become a commercially valuable crop.

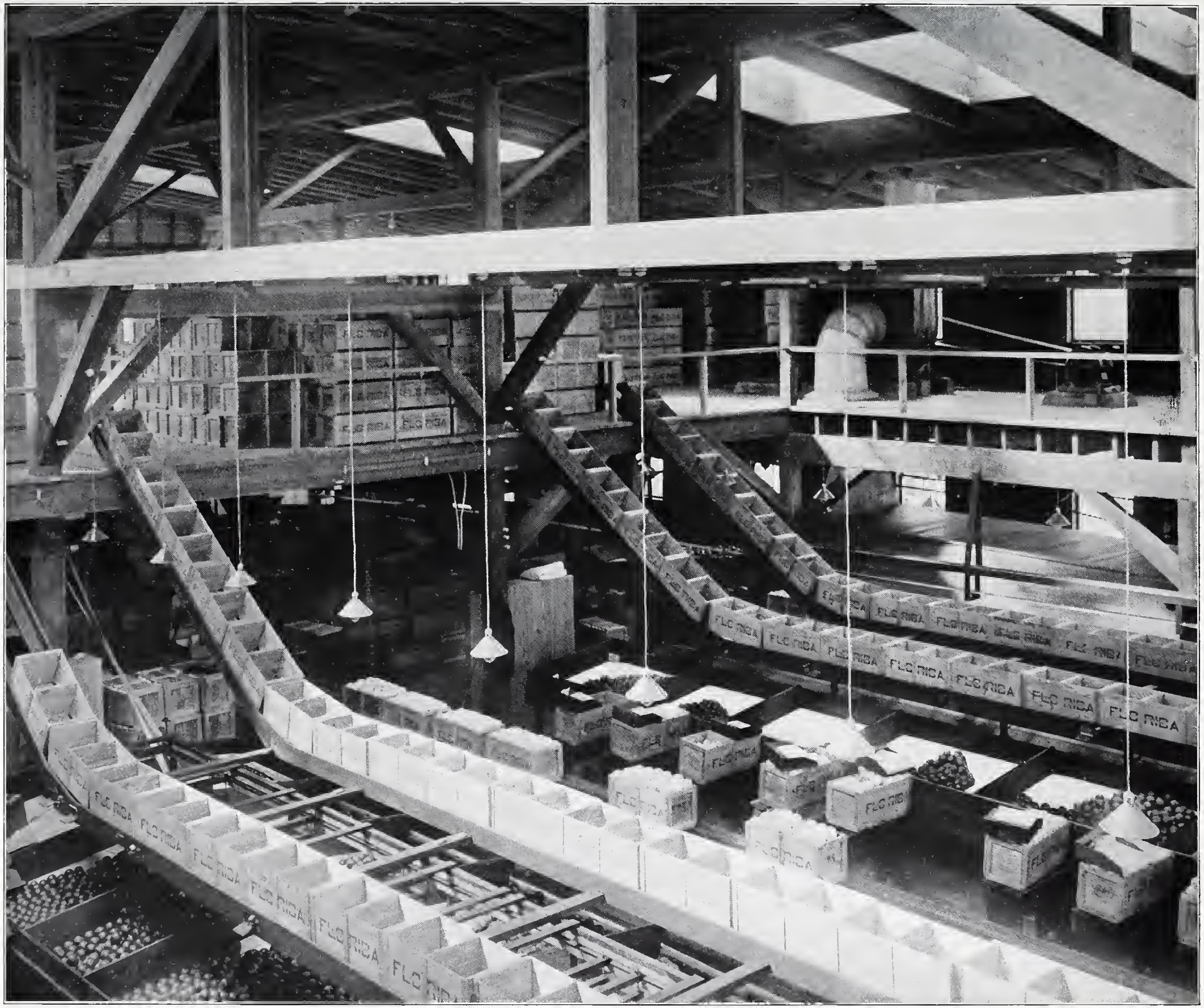
In various sections of Central Florida the first white settlers found hundreds of acres covered with wild orange groves, wherein the trees grew as Nature had planted them in forests and with no regard for the symmetrical arrangement in rows which the modern horticulturist is careful to preserve. Often these trees grew intermingled haphazard with indigenous growths of the soil, whose protection from the extremes of cold preserved the citrus trees from serious injury.

The most vigorous and healthy citrus stock has been found to be that of the sour orange, a fruit in which the bitter and the sour are so intermingled as to make it unpalatable. On this and other vigorous native stock the choice varieties of sweet and better flavored oranges were budded, new and improved varieties of seedlings were developed and the final result has made the Florida orange known everywhere, without a rival and the best in the world.

CHARACTER OF THE ORANGE TREE

The vigorous and healthy orange tree is almost ideally beautiful among the products of the soil. When left free to develop naturally, it reaches a height of forty to fifty feet; it puts out its first branches four to six feet above the ground and it shapes itself into symmetrical form. Its leaves are of a dark olive green, making a rich background for the bloom, which is of purest white with dainty yellow stamens and a fragrance that is powerful, penetrating, and delightful.

The texture of the orange tree classifies it among the hard woods. Its fiber is close and firm and the wood of a dead and dried tree will test the metal of the ax and the patience of the chopper to cut it up. The tree sends down a tap root into the earth almost or quite equal in length to the height of the tree above the ground, while close beneath the surface it spreads out a network of fine, fibrous roots to absorb the moisture from the soil. It matures slowly, beginning to bear under favorable circumstances in the fourth and fifth years and increasing its production with its growth for fifteen to twenty years. The natural life of the tree is from fifty to sixty years, perhaps much more, for the limit is practically unknown in Florida.



INTERIOR OF FLORIDA ORANGE PACKING HOUSE, WINTER PARK

The season of blooming is regulated much by the weather conditions, from January to March. The dormant season of the tree begins with the full maturing of the fruit in November or early December. In some seasons and in certain sections of the state, high temperatures, accompanied by warm rains, start the sap in January, and with the continuance of these conditions, the tree is likely to put out a profuse bloom. If a later occurrence of cold does not kill this bloom, the fruiting follows, but it is usually the normal bloom of late February and March that brings the best crop.

The Florida orange reaches its prime, considering flavor, appearance and carrying qualities, about December 15th. It may be allowed to hang on the tree until the warm weather of April without deterioration.

To enter upon a discussion of the methods of cultivation would be to open an almost inexhaustible topic about which every Florida orange grower has his own ideas. The soils adapted to this culture would be almost as difficult to describe. Splendid results have been obtained on half of the many varieties of soils that give such wide diversity to the products of the state.

PROPAGATION

The propagation of citrus varieties in Florida is by budding. It is a well established fact that the seedling will not "come true" to variety. Seeds from oranges on the same tree will not produce trees whose fruit is the same as that of the tree from which they came. Indeed, two seeds from the same orange will grow two trees whose fruit may have characteristics entirely different from each other and both varying from that of the parent stock. Accordingly the only method of perpetuating a particular variety is by budding from the tree whose good qualities it is desired to preserve. This process is not wholly unlike that of grafting, as of the apple or pear in the north.

It is this method by which grapefruit is made to grow on orange stock. Several varieties of orange, besides grapefruit and tangerine, may be gathered from the same tree on which they have been budded.

Citrus growth in Florida has several insect and parasite enemies, which in times past have caused great financial losses. The scale and the white fly, besides several fungus growths, have been the cause of much annoyance to fruit growers, but their possibilities for harm have been much curtailed by the work of the Florida Experiment

Station at Gainesville. Persistent scientific study of these enemies in the groves where they appear and repeated experiments have enabled horticulturists to wage a successful war of extermination. The results obtained in this way have made the cultivation of citrus fruits every year more safe and profitable.

ORANGES AND THE WEATHER

But it is the cold in the northern sections of the state and the possibility of cold, that have brought the greatest losses to the grower, for the orange tree is tender, and its fruit filled with juice, will withstand only a few degrees of frost. Under normal conditions of location from four to six hours of a temperature of twenty-four degrees, Fahrenheit, with no wind stirring, will break down the cell tissues of an orange and then begins the process of decay and fermentation. The tree itself will pass through such a test without serious damage, but if the trunk and branches be filled with the up-flowing sap, the damage is likely to be much greater than if the tree be in a dormant condition.

Various methods of protecting orange groves from cold have been devised and used in the northern and central parts of the state and with varying success. The proximity of any considerable body of water is of great value, especially if the grove is located on the east or northeastern side of a lake or wide river, for the reason that the cold of the westerly winds, which are most destructive, is modified by the water. The location of a high and thick growth of pines or oaks on the west and south sides of an orange grove is also of much advantage, as a protection against cold.

Huge tents of light cloth, covering the entire tree have been used and with fair success when the temperatures were not too low, but the expense was prohibitive. Fires kindled in variously modeled stoves or fire-pots, with wood or oil fuel, piles of quick burning pine wood scattered through the grove, have prevented serious damage and have saved valuable fruit crops on the trees from ruin by the sudden arrival of frost. But the efficiency of these methods through a long series of years has not been sufficient to withstand the greatest extremes of cold and to prevent the destruction of groves in the northern part of the state. The result has been that orange culture as a commercial investment has been curtailed in these sections of Florida. Much the larger portion of the annual product comes from

A FLORIDA ORANGE GROVE

south of the latitude of twenty-nine degrees, which crosses the state near the south line of Volusia and Marion counties.

The most recent report from the State Department of Agriculture shows that more than eighty-one per cent of the orange crop and ninety-two per cent of the grapefruit comes from the counties of Brevard, Dade, De Soto, Hillsborough, Lake, Orange, Palm Beach, Polk and St. Lucie. More than one-half comes from the section south of latitude twenty-eight, south, or about the northern boundary of Hillsborough and Polk counties.

GRAPEFRUIT

Grapefruit, also known as the pomelo, is somewhat more susceptible to frost than the sweet orange. The large popularity of and the increasing demand for this product have been developed since the great freezes of 1894 and 1895, and its center of production is further south in the state than that of the sweet orange.

LEMONS

The cultivation of the lemon has not been made a great success for several reasons well known, and for some possibly not so well understood. The lemon, tree and fruit, is more tender than the orange. It requires more careful attention as well as a more abundant supply of moisture during the development of the annual crop. This means the installation and use of artificial irrigation, excepting in unusual surroundings, and the uncertainties of large returns from the crop have not seemed so far to justify the expense. This has given California an advantage in the lemon culture.

There appears to be no reason why the cultivation of the lemon in Florida should not be made as valuable commercially as on the Pacific coast, if the same artificial conditions may be supplied. This fruit was raised quite extensively in the central counties of the state prior to 1895, the product reaching 140,000 boxes in one year, but since the destruction wrought by the cold of that year the culture has not been revived to a large extent, the crop of 1912 being about twelve thousand boxes.

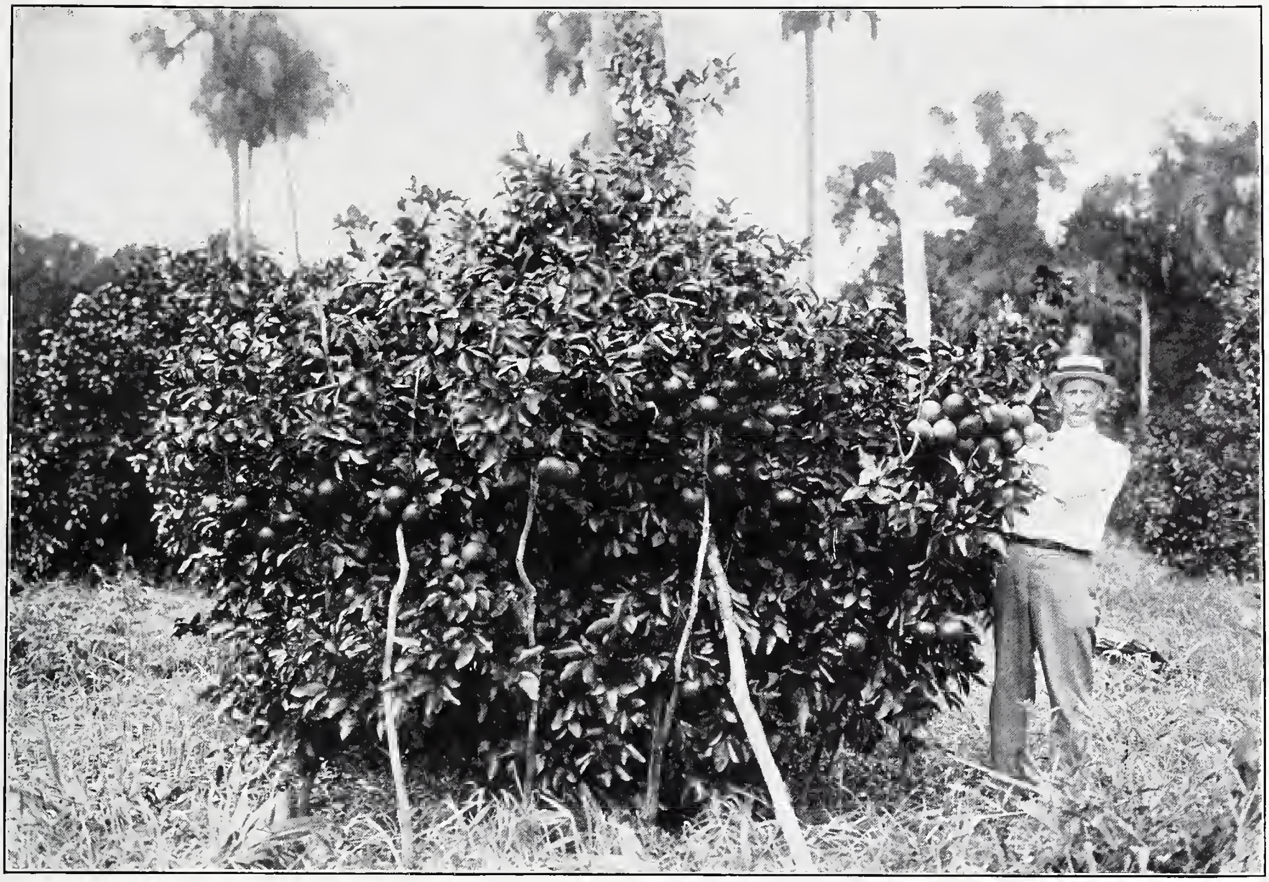
LIMES

Florida limes are among the most profitable of the citrus crops, although their production has not yet reached large proportions. The acid of the fruit is in every way equal to that of the Sicily lemon and much superior in most respects to that of the imported fruit. The lime tree grows where no other citrus growth can flourish. It is said to reach its perfection on the coraline rocks of the Florida keys. For many years it was one of the neglected resources of the state, but its value has been recognized in the planting and cultivation of extensive groves in the lower counties of the East coast and on the keys. Dade and Palm Beach counties are the largest producers.

RECORD OF PRODUCTION

The annual citrus product of Florida through the years for which records have been preserved and since the crop has been recognized as of commercial importance, is given:

Season.	Boxes.
1884-85	600,000
1885-86	900,000
1886-87	1,260,000
1887-88	1,450,000
1888-89	1,950,000
1889-90	2,150,000
1890-91	2,450,000
1891-92	2,713,000
1892-93	3,387,260
1893-94	4,221,000
1894-95	2,809,200
1895-96	147,000
1896-97	218,380
1897-98	359,000
1898-99	1,252,000
1899-00	974,000
1900-01	352,600
1901-02	974,000
1902-03	1,470,500
1903-04	1,955,000
1904-05	2,377,800
1905-06	2,969,500
1906-07	2,909,500
1907-08	3,800,000
1908-09	5,250,000



FIVE YEAR OLD GRAPEFRUIT TREE WITH TEN BOXES OF FRUIT

LATE FRUIT AND EARLY BLOOM

Season.	Boxes.
1909-10	6,100,000
1910-11	4,600,000
1911-12	4,250,000
1912-13	8,125,000

The figures in this tabulation include oranges, grapefruit, lemons and tangerines. In the season of 1909-10 the production of grapefruit reached 553,000 boxes; in 1910-11 it was about three hundred thousand boxes, and in 1912-13 it was 1,405,000 boxes. An examination of the wide variations in these figures from year to year and between consecutive seasons, brings vividly to memory of Florida fruit growers some experiences of the past.

HORTICULTURAL DISASTERS

Occurrences of cold snaps which resulted in more or less serious damage to the citrus product of Florida, are recorded in 1886, 1894, 1895, 1899, and 1900. Extraordinarily low temperatures have occurred in the state, but those enumerated have come since orange culture has reached sufficiently large proportions to be seriously affected. In each of these years, it must be remembered, the larger part of the orange crop was being produced in the central and northern parts of the peninsula, and before the horticulturist had learned by convincing demonstrations the limits within which he might safely and profitably plant his groves.

The freeze of 1886 brought much injury to orange groves in certain limited localities in the northern and central parts of the state, but it was not widespread. What is known in Florida's horticultural history as "The Great Freeze," occurred on the night of December 30, 1894. A cold wind swept out over Georgia, Alabama, the South Atlantic states and the northern half of Florida. Record low temperatures were reached—two degrees below at Tallahassee, fourteen above at Jacksonville, and corresponding readings in other localities. Probably one-half of the citrus crop was still hanging on the trees and but little of it escaped destruction. The ground was covered with the yellow globes as solid as rock. The leaves dropped from the trees, the smaller branches broke off and the trunks were split open with the frost. Hundreds of acres of groves were frozen to the ground and below the surface. The few remaining signs of life were effectually destroyed in some sections by a frost, which came some weeks later, on February 7, 1895.

RESULTS FROM THE FREEZE

It was the most serious and gravest financial disaster that had come to Florida in all its history, but like other blessings in disguise, it effectually taught two lessons. The first was that, with the exception of certain limited localities, weather conditions in Northern Florida were too uncertain to admit orange culture as a dependable business venture. The result was that the growers immediately prepared to plant new groves in more favored sections of the state. Sufficient data were available to demonstrate that the great area of Southern Florida was safe for the investment of capital and effort in this direction. Accordingly, the growers turned their attention to those counties which since that period of disaster have comprised the great orange-producing section of the state. The records of weather variations in this part of the peninsula preclude any probability, almost any possibility, of a repetition of such disasters in the time to come.

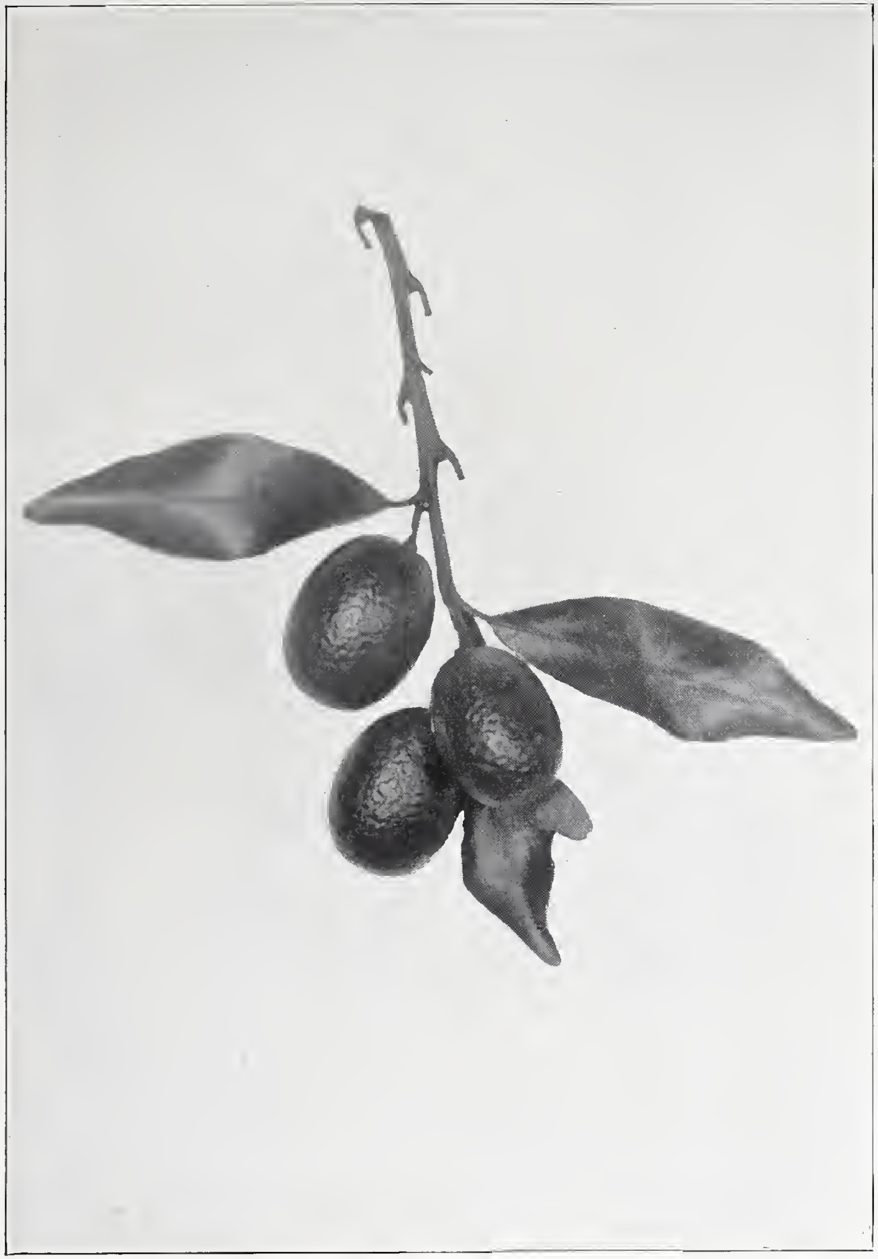
DIVERSIFIED PRODUCTION

The second lesson learned from the experiences of 1894 and 1895 was that the soil products of the state must be diversified, if they were to reach their highest development. The returns from orange culture had been so large that hundreds and thousands of owners, native and non-resident, had come to regard the orange grove as a mine of wealth, whose productive capacity was inexhaustible and unlimited and which would go on increasing indefinitely in the future. They had neglected the cultivation of other crops for their own consumption and for export, preferring to put all their efforts into the production of oranges and buying many of the commonest vegetables and supplies for farm animals, which they could have produced with vast saving and economy.

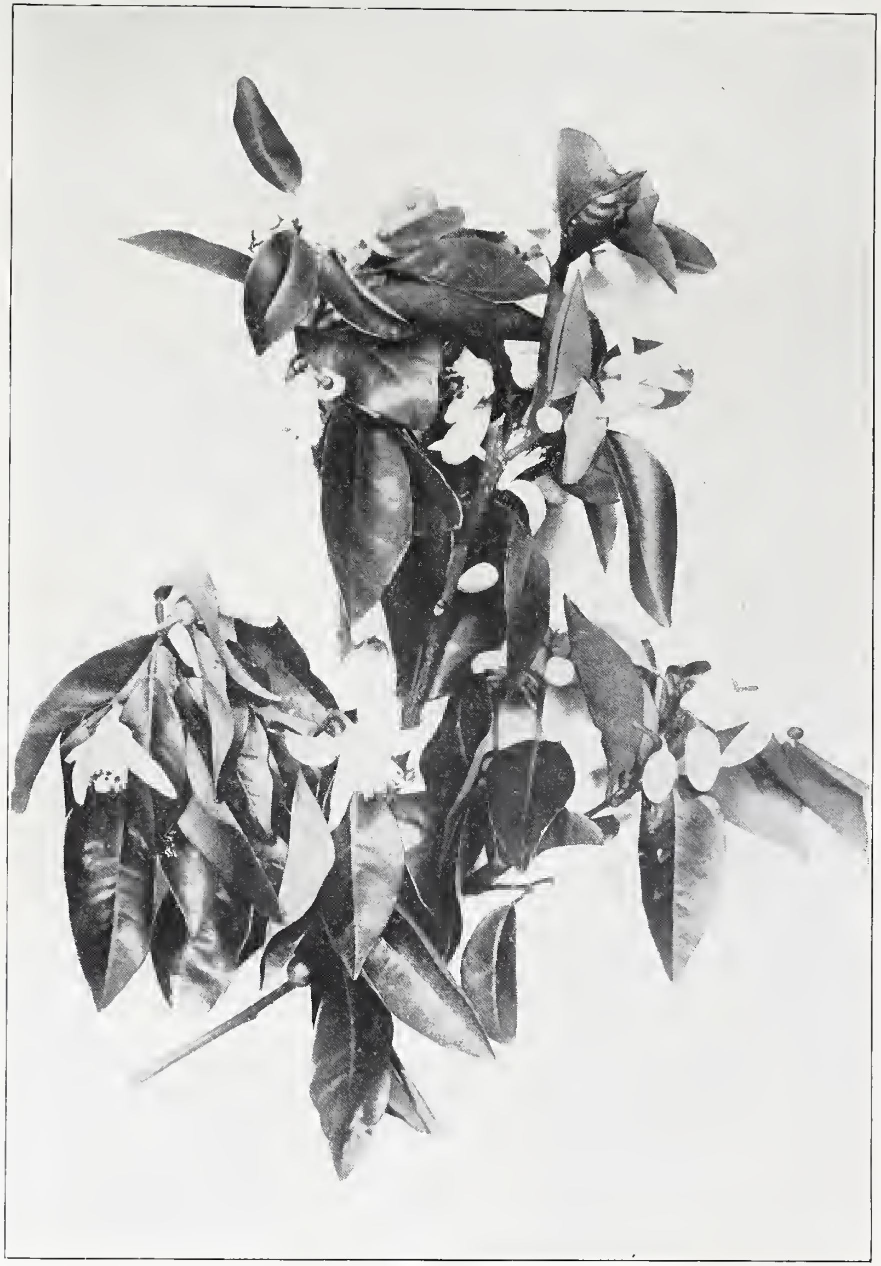
The destruction of fifty million dollars of property in one night by the turn of the wind brought a sad recognition of the truth. It took from Jacksonville the proud distinction of being the greatest orange market in the world, but it brought about the development of other resources, which have added enormously to the wealth of the state.

METHODS OF MARKETING

The methods of handling Florida oranges from the tree to the place of consumption are a recognition of the fact that honesty pays.



FLORIDA KUMQUAT



ORANGE BLOOM AND LEAVES

The most progressive growers have worked separately and together, but in perfect harmony for years to create and maintain a reputation for their product in the markets of the world. An honest brand upon every box of fruit with the reputation that it brings, is the best asset that the grower can have, and these men have impressed the fact upon the less progressive growers, until as a rule, the shipments from the state are up to the high standards that have been fixed.

GRADING AND SIZING

Florida oranges are graded according to color, as bright and russet, with sometimes a subclassification of the two grades. Russets are the fruit on which the oil cells of the skin have been broken by the rust mite, while the fruit is green, allowing the oil to oxidize on the surface and producing a brown coating. It injures the fruit only in appearance while actually improving its flavor and carrying qualities.

The fruit is also graded according to size of its largest diameter. The size is denoted by the number of oranges that may be packed snugly into the box of standard dimensions. This package is divided equally into two compartments, each of which measures twelve inches square by twelve inches deep. Each orange is carefully wrapped in tissue paper and packed into the box according to regular diagrams arranged for each size, so that when the package is closed, every piece of fruit fits tightly in its place, leaving no chance for movement or for bruising, and it can be shipped around the world.

The standard packs, or number of pieces of fruit that can be put in a box, now recognized by Florida orange growers are, for sweet oranges, 96, 112, 126, 150, 176, 200 and 250; for grapefruit, 28, 36, 46, 54, 64, 72, 80, 96 and 126, and for the tangerine, in half boxes, 72, 96, 106, 144, 150, 168, 188 and 196. Very little fruit is packed larger or smaller than these sizes.

These sizes are determined by the measurement of their largest diameters and differ successively by one-eighth or one-sixteenth of an inch. For oranges they vary from three and one-half inches for the 96 size, to two and seven-sixteenths inches for the 250 size. In grapefruit the 28 size measures five and one-fourth inches in diameter, the 36 size, five inches, and on down to the 80 size, four inches, and the 96's three and five-eighths inches.

ORGANIZATION OF CITRUS GROWERS

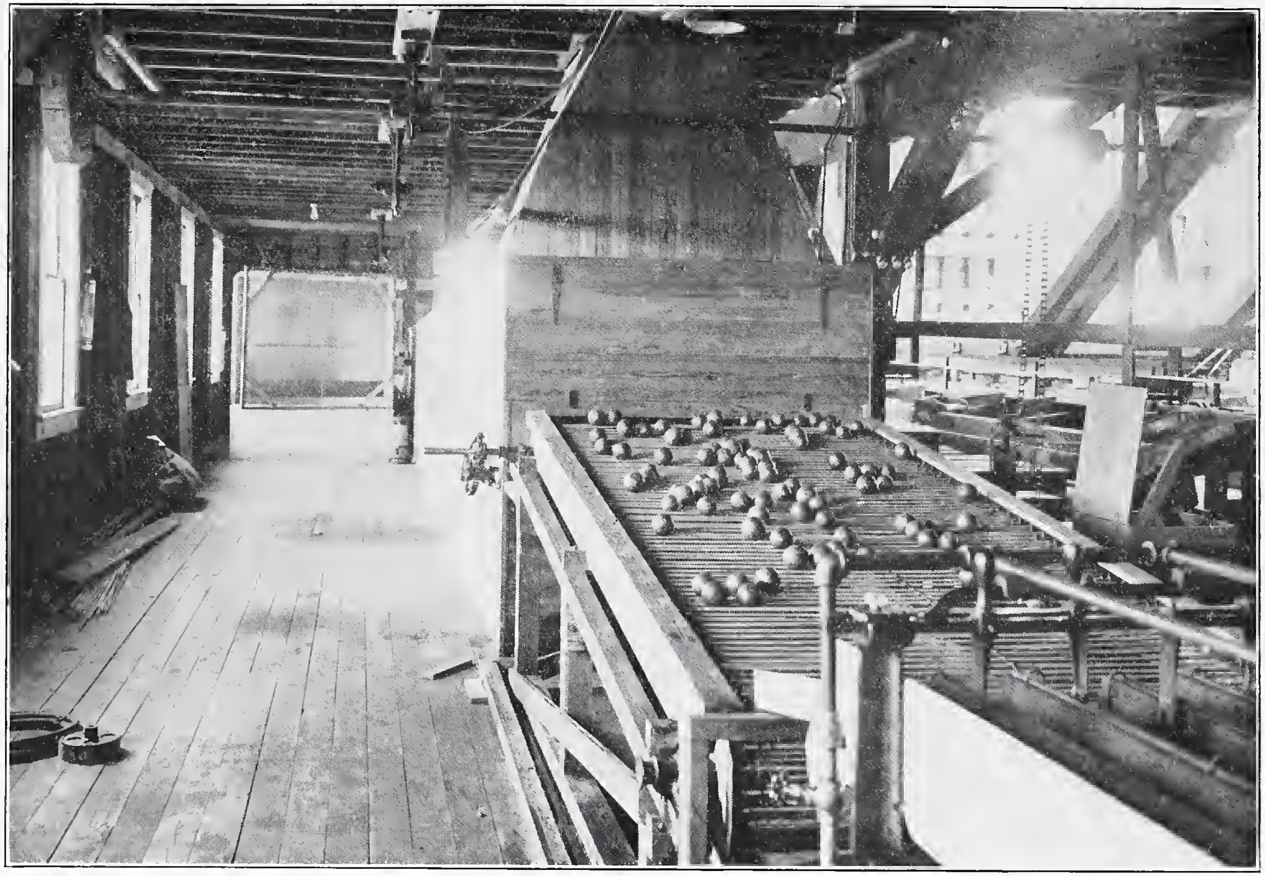
At various periods in the history of orange culture in the state, organizations among the growers for mutual advantage and protection have been maintained. The largest and most important of these is the Florida Citrus Exchange, which has been in existence for several years. It includes in its membership less than one-half of the growers of the state. It has been working to secure honesty and uniformity in the packing of fruit, to build up and maintain the reputation of the product by careful grading and by preventing the shipment of green and immature fruit, which, colored by artificial heat and sweating, have been placed on the northern markets as early as October; and to control shipments in season so as to avoid glutting the markets outside the state by an oversupply at one or two points, while other consuming sections have reported a famine of these products.

The organization has accomplished much good along the lines in which it has worked and it has secured better values for the fruit that has been shipped through its agency. Many of the leading growers of the state, although not allied with the association, have worked with splendid efficiency toward the same ends. At several locations in the orange growing belt, the organization has erected and equipped model packing houses. In connection with these it has trained crews who handle the fruit from the grove to the shipping station, relieving the grower of all responsibility for his fruit after it is ready for the harvest.

PICKING AND PACKING

The pickers go into the grove, each wearing cotton gloves, for the fruit must not be touched by the naked hand at any stage of its progress toward the market. The fruit is clipped, never pulled, from the branch, for the stem is likely to remain on the tree and a break in the skin of the fruit starts decay. The stem, therefore, is cut close to the fruit so that it may not injure other fruit in the same package nor in any stage of packing. It is placed in canvas sacks hung from the picker's shoulder. It is deposited, not dropped, in field crates for transportation to the packing house. This is done on spring wagons, so as to avoid all jarring from the unevenness of the road.

In the packing house the fruit is allowed to "shrink" for twenty-four to forty-eight hours, and then it is placed in a large tank of water



WASHED FRUIT IN CARRIER GOING TO DRIER IN FLORIDA PACKING HOUSE

for washing. It is scrubbed by revolving brushes which remove all scale and dirt from the surface. Next it is run through a drying chamber heated artificially to about one hundred degrees. From this chamber and by the same moving platform it is dumped on wide belts of canvas, which carry it past the graders and inspectors for the final examination. From them it goes to the sizer which, through various runways deposits it in bins, graded as to size within a small fraction of an inch and more accurately than human eyes or hands could possibly accomplish.

From these bins the packers size and wrap each piece of fruit separately and put it in the box with absolute accuracy and with almost incredible speed. The package then goes to the nailing machine and is ready, after stenciling, to be loaded into the car which stands waiting on the railroad track close to the packing house. Three hundred boxes of standard size are considered a carload, and in less than carload shipments each box is billed and the freight rate is charged upon eighty pounds weight.

The fruit is handled by male labor, excepting that in some packing houses women are employed as packers, and many of them become more expert, rapid and accurate than the male employees. From the tree to the box the grading of the fruit is carefully followed, and every person who handles it is required to watch for defects that might injure the sale or contaminate the contents of the package. The rule, "Every doubtful orange is a cull," is hung in big letters in many packing houses as a constant reminder to all workers.

ADVANTAGES OF CAREFUL METHODS

The question may be asked, How much is gained by these improved methods of handling oranges? It is not a question of what, but how much. The answer is readily given and it is backed by proven figures. The cost of packing is reduced compared with the older and cruder methods, from twenty to twenty-five per cent, in some cases by even larger figures. Uniformity is given to the pack and a reputation is made for the brand or stencil, which readily commands higher prices. The net result has been that these prices through several seasons in New York, Chicago, Philadelphia and in most of the northern markets, have averaged from twenty to forty per cent above the values obtained for fruit that does not bear these or other well known and established brands.

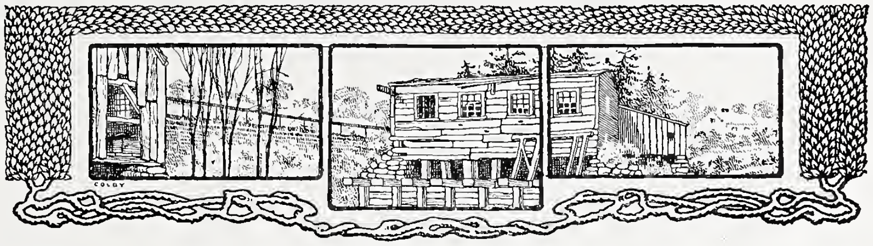
PROFITS FROM ORANGE CULTURE

As to the profits to be gained from the cultivation of citrus crops in Florida, there are many elements that enter into the problem, and not the least of these is the individuality of the grower himself. Indeed, it is the most important of all, for the man who is to succeed in any undertaking is the one who is willing to learn from others; he is the one who has resources within himself to meet emergencies. Climatic and soil conditions here differ much from those in northern and western sections. The horticulturist who comes from these sections expecting that his experiences will insure his success here, is doomed to failure unless he shall combine with these experiences a large measure of the homely quality of common sense.

Many have made splendid profits from this culture. The opportunities are better than ever before and the rewards will go to those who shall master every detail, who will take advantage of what others have accomplished and who will make of their work a science.

CHAPTER X

PROFITABLE SOIL PRODUCTS



FLORIDA, more than any other state in the Union, and more than all other states combined, with the exception of California, surpasses in the varieties of its soil products. The state has been selected by the United States Department of Agriculture as the most desirable field for its experiments in the adaptation of foreign trees, forage plants, fruits and vegetables and it has established stations near both coasts of the state for this work.

Some of these fruits and other profitable soil products have been developed to a great commercial advantage in the state, and bring millions of dollars into Florida each year. The production of oranges is greater than from any other section and it would seem that this great industry is but in its infancy.

In the production of pineapples, the eastern coast of this state is particularly profitable, and the quality of the "pines," raised largely in St. Lucie county, surpasses those grown elsewhere. A stranger examining the soil would think it barren and that nothing in the way of vegetation could be produced from it. It appears to be a silicious sand, almost dazzling in its whiteness under the glare of the summer sun, yet on the authority of the Indian River Fruit Growers' Association, whose records cover more than twenty-five years of this culture, the average net profits per annum per acre from raising pineapples in this section is $210. Formerly this fruit was raised without protection from the sun or the coolness of the winter months. Within recent years, however, the most successful growers have erected over their fields rough coverings of wooden slats, carried on posts from eight to ten feet above the ground. This protection is against the heat of the summer seasons rather than to ward off the cold, for the latter protection is rarely if ever needed.

The production of pineapples in 1912 approximated three hundred and fifty-six thousand crates, valued at $383,000. This production came almost entirely from St. Lucie, Dade, Lee and Palm Beach counties, the St. Lucie product being about two hundred and eighty-five thousand crates.

AVOCADO PEARS

The avocado (Alligator Pear, *Aguacate*) may be classed as a new fruit, although it has been raised in the tropics for a long period. South Florida appears to be the only region in which the propagation and cultivation of this fruit have been carried on systematically and profitably in the United States. Experiments have been made in California on an extensive scale, but they appear not to have resulted as successfully as in Florida.

The avocado, although technically a fruit, is from a culinary standpoint no more a fruit than the cucumber, nor can it be classed correctly as a vegetable. It appears to be in a class by itself, and possibly should be known as the "salad fruit," as it is the only soil product that when ripe is eaten exclusively as a salad. The nearest approach to this is perhaps the olive, although that is regarded usually as a relish. But, like the olive, the taste for the avocado appears to be an acquired one. To the average epicure the first taste is not pleasant, but when once acquired the most critical become the most enthusiastic over it.

The avocado tree varies greatly in shape with its different varieties. Some are like the Lombardy poplar, others have the shape of the American elm, although not its size, while others closely resemble the ordinary fruit tree, the leaves varying from six to nine inches in length, but all are broad. The heavy fruit is borne on long, slender stems, usually at the periphery of the tree. The tree lives, in the tropics at least, to the age of eighty years, and it bears from its fifth or sixth year to old age. It is said that some avocado trees in Peru antedate the Spanish settlement of that country, and are still in bearing. The tree in maturity bears from fifty to five hundred fruits each year, although some trees bear only ten or a dozen pears a year.

METHODS OF CULTIVATION

The avocado does not "come true to seed"; in fact, it is variable and seedlings do not bear well. Therefore, the only method of propagating selected varieties is by budding or grafting from the trees it is desirable to propagate. A variety has been discovered in Florida

GATHERING AVOCADO PEARS

that bears seedless fruit, and as no use has been discovered for the seed, except to grow the stocks upon which to bud, a seedless strain of the fruit is desirable.

The avocado requires a moist, well drained soil and not subject to overflow. The soil should contain an abundance of vegetable matter. The production of avocado pears in Florida, by the report of the Agricultural Department for 1912, was nineteen thousand, four hundred crates, valued at about fifty-four thousand dollars. Three quarters of this crop was produced in Dade county. The comparatively recently created demand for this product, which is increasing from year to year, promises a great commercial opportunity for their cultivation, and Florida, it appears, is to be the source of the supply.

THE BANANA IN FLORIDA

Few people, however well informed, realize that Florida produces a considerable quantity of bananas, and of a quality superior to the fruit which reaches this country from foreign sources. Although it is essentially a tropical fruit, it appears to have adapted itself perfectly to the conditions of soil and climate found on the southeast coast of Florida.

Quoting from a recent writer, we read the following:

"The banana may be, as is believed by many people, the original forbidden fruit of the Garden of Eden. This would materially enhance its general interest to man, if it were only known to be a fact. In any case, however, it is one of the curiosities of the vegetable kingdom, being neither a tree, nor a palm, nor an herb, nor a bush, nor a shrub, nor yet a vegetable, but merely an herbaceous plant with the status of a tree. Although it sometimes attains a height of thirty feet, there is no wood fiber in any part of its structure, and the bunches growing on the dwarf banana plant are frequently heavier than the stalk that supports them. There is no plant known to man which gives such a quantity of food to the acre as the banana; it yields forty-four times more by weight than the potato, and one hundred and thirty-three times more than wheat. Another peculiar fact about the banana is that few insects will attack it, and that it is practically immune from diseases that fruits are heir to."

The banana product of Florida in 1912 came almost entirely from Dade and St. Lucie and Palm Beach counties. More than twenty-seven thousand bunches were shipped, for which $18,700 were received.

The fruit is raised with little cultivation and expense and the income from the industry is declared by enthusiasts to be largely profit.

COCOANUTS

The cocoanut tree is one of the most beautiful specimens of the palm that grows in the world. The commercial cultivation of the nut has not been undertaken on a large scale in this country, and only in Florida has it become an appreciably valuable article of commerce. Cocoanut trees when systematically laid out are planted from twenty-five to thirty feet apart, making fifty to sixty-five trees to the acre. Usually in Florida they have not been planted in groves, but rather have been used to border driveways or the edges of fields devoted to other culture. If the young trees are carefully nurtured the first nuts are borne in the fourth year. Growing wild, the tree is ten years old before it produces. Under favorable conditions it reaches its maximum yield in from eight to ten years and continues this yield until it is fifty or sixty years old. The tree produces regardless of seasons. Blossoms come forth every month and the nuts ripen about twelve months later. Thus every phase of growth may be found on each tree. From seventy-five to one hundred merchantable nuts are matured each year. The production in 1912 in Dade and Palm Beach counties was two hundred and twenty-seven thousand nuts, which were sold for $8,500.

GUAVAS

The guava grows on both sides of the state in the southern counties bordering the ocean and the gulf. The production in 1912 exceeded fifty-six thousand crates, which were valued at $50,000. In its raw condition the guava is much relished by those who appreciate its delicate flavor. Its greatest use, however, is in the delicious jellies and pastes which are known everywhere. The hulls or portion between the seed-pulp and the skin (which granulated substance gives it a pear-like aspect, by reason of which it is denoted the "guava pear") when preserved, is regarded as a delicacy by the natives of Cuba, whence it originally came.

JAPANESE PERSIMMONS

In Japan, the persimmon is to the natives what apples and oranges are to Americans. The Japanese varieties do best in Florida and the

GATHERING PINEAPPLES

SAN LUIS VINEYARDS NEAR TALLAHASSEE

trees thrive on almost any kind of soil, giving good results on land too poor for other crops. It is not affected by any cold that comes to Florida, and the tree grows as well in the cotton belt as in the southern counties of the state. Although it is not yet an article of large commercial value, four thousand, five hundred crates were shipped from Florida in 1912, which were valued at $6,600.

MANGOES

The mango is one of the products of Florida soil about which little is known outside of the state, although it has been proven a profitable producer in this region. The latest official bulletin of the State Agricultural Department shows that twenty-six thousand, six hundred crates were produced in 1912, with a value of $26,650; and almost one-half this crop was raised in Duval county.

BERMUDA ONIONS

California for years led in the production of this splendid vegetable, but within recent years Florida has demonstrated that its soils can produce the Bermuda onion at an immense profit. In fact, with proper care and cultivation, it is said that from eight hundred to one thousand dollars may be gained on an acre of suitable ground planted to Bermuda onions. In many parts of Florida there are lands particularly adapted to this product, and large profits have been reported from every section. The crop of 1912 was sixty-five thousand crates, which brought $102,000.

To enumerate the many varieties of fruits and vegetables produced in Florida and shipped to all parts of the country and outside of the United States, would require much space. To enumerate some of the crops and their values as reported by the State Department of Agriculture for 1912, will give some idea of the aggregate value of of these crops.

ARTICLES	QUANTITY	VALUE
Upland cotton	42,013 bales	$2,095,973
Sea Island cotton	28,071 bales	2,188,830
Corn	5,453,936 bushels	4,455,161
Oats	287,708 bushels	232,250
Sweet potatoes	2,953,581 bushels	2,398,257
Rice	14,737 bushels	22,609

ARTICLES	QUANTITY		VALUE
Sugar cane, syrup	67,846	barrels	920,693
Field peas	76,885	bushels	149,456
Field pea hay	9,849	tons	180,894
Native grass hay	46,650	tons	516,351
Peanuts	1,534,736	bushels	1,630,275
Tobacco	1,444,626	pounds	586,607
Velvet beans	320,930	bushels	598,815
Velvet bean hay	2,526	tons	46,673
Cassava	923	tons	5,360
Onions	65,162	crates	102,067
Lettuce	625,012	crates	818,307
Celery	420,394	crates	482,579
Peppers	250,918	crates	288,663
Irish potatoes	1,080,215	bushels	1,640,882
Cabbage	193,729	crates	295,273
Tomatoes	1,752,194	crates	2,112,829
Squashes	98,403	crates	133,183
Egg plants	39,558	crates	39,981
Cucumbers	363,390	crates	344,428
Watermelons	6,895	carloads	511,417
Cantaloupes	280,551	crates	285,023
English peas	12,045	crates	21,165
Beets	23,123	crates	35,210
Beans	768,300	crates	798,221
Pecans	16,893	bushels	94,887
Strawberries	3,513,108	crates	147,456
Pears	30,993	barrels	78,258
Peaches	178,566	bushels	225,576
Plums	17,716	bushels	23,072
Grapes	1,054,945	pounds	74,581
Grape wines	20,354	gallons	19,968
Figs	16,534	crates	25,585
Honey	675,718	pounds	72,363

OTHER VALUABLE VEGETATION

This great southern peninsula has several soil resources which have been demonstrated to be commercially valuable, but which have not been developed as great industries. They invite the investigation of capitalists, and it is not a matter of doubt that the future

CASSAVA

VELVET BEANS

will bring large investments to aid in their building up. Among these are the cultivation of sisal hemp, the world's largest source of rope and cordage; the camphor tree, rice, sugar, and starch.

SISAL HEMP

Sisal hemp was introduced into Florida in 1834, probably from South America, and the plant has been developed to perfection quite generally through southern Florida. The United States imports annually approximately fifty millions of dollars worth of sisal hemp, and the product grown in Florida, according to the authority of the United States Department of Agriculture, is of a better quality than that produced in foreign countries. Indeed it is said that from the Florida plant the true sisal plant (Agava Sisalana) has been distributed in nearly all tropical countries. The same authority declares that southern Florida has thousands of acres of land better adapted to the cultivation of the sisal plant than are the sisal-producing districts of Yucatan, from which millions of dollars' worth are brought into this country every year.

The plant, which contains in its leaves the fiber used in the manufacture of rope, resembles in some respects the better known century plant, particularly in the leaves, which are several feet long, thick, and protected with a leathery outside covering. The young plant requires from one to three years of growth before its leaves may be gathered; but once set, there is no need of further planting. The parent stalk lives about ten years and from the third year reproduces new plants from suckers, and thus the plantation is reproduced indefinitely. It requires no fertilizing and practically no cultivation, the occasional removal of old and dead plants or brush being all that is required. A rich soil is not necessary for success in the growing of sisal hemp. The average annual yield from a matured plant is at the rate of about fifteen hundred pounds from each acre. The leaves are put through a decorticator, which separates out the fiber ready for spinning. A large plantation on Pine Island, at the entrance to Charlotte Harbor on the lower west coast of the state, has been devoted for several years to the cultivation of this plant. Its operations have been sufficient not only to demonstrate the successful culture of the sisal plant in Florida, but have given some interesting figures as to the economical feasibility of the industry. They have shown the cost of production to be two and one-half cents a pound of fiber, which at market values is worth six cents a pound. Deducting the expenses of gathering, cleaning and other incidentals leaves a net profit of sixty dollars an acre, extending through an indefinite series of years. It is a crop which requires no replanting and the entire labor is in gathering and preparing it for market. In other words, the net annual returns are equal to, or exceed by a considerable margin, the original cost of the land on which the plant is grown. A plantation of one hundred or one thousand acres will return a handsome income on the investment.

The erection of machinery for separating sisal fiber would be unnecessary for the average grower, as there is a ready sale for the leaves as they come from the sisal plant, at the establishment already in operation at St. James City. In the larger development of the industry such establishments would be centrally located to handle the product of many hundreds of acres, divided into a number of small plantations or into fewer large ones.

The process of cleaning and spinning requires but little time, for the leaves delivered to the decorticator in the morning may be turned out as finished rope in the afternoon of the same day.

CAMPHOR

The tree from which the camphor gum of commerce is made is not only a beautiful ornamental tree, for which purpose it has been used almost exclusively in the south, but it is one having a commercial value that in time may be made to rival the turpentine industry. The tree grows to the height of thirty or forty feet and is handsome in appearance. It is well suited for large hedges or borders and may be trimmed into any desired shape. The United States Department of Agriculture for a number of years has been conducting experiments to demonstrate the value of this tree in the production of camphor gum on a commercial basis. Complete reports have not been published, but sufficient information has been sent out to warrant the large planting of trees for industrial purposes. A practical demonstration of the possibilities of the tree in Florida has already been made on a large plantation of several hundred acres near Palatka. A number of years is required to determine within narrow limits the profit to be derived under favorable conditions from a development of this nature. It is impossible, therefore, to give definite figures, but it is a practically assured fact that conditions in Florida warrant large investments in this industry. It has been demonstrated that the tree itself will grow to its full development in this state. With

COTTON FIELD

SUGAR CANE FIELD

this fact established it would appear that the most important element of the problem has been proven.

Experts of the United States Department of Agriculture are positive in the assertion that the production of camphor gum may be made an important industry in Florida, and with this new source of supply the world would be relieved from the monopoly supported by the Japanese Government on the Island of Formosa.

RICE

Florida is one of the nine states reported by the government census as a producer of rice. The yield of these states in 1910 was nearly seven hundred million pounds and the importations almost two hundred million pounds, on which the tariff ranged from one-quarter of a cent a pound on rice flour, to two cents per pound on grain rice.

This grain forms the principal food of about one-half of the population of the earth and it is more widely and generally used as a food material than any other cereal. While rice is grown chiefly on lands that are low, level and easily irrigated, there are varieties which can be grown on fertile uplands without irrigation. The yield of rice varies with conditions of soil, climate and methods of culture. In the Atlantic coast states the average yield per acre is from eight to twelve barrels of one hundred and sixty-two pounds each. In the lower Mississippi states it runs as high as sixteen or eighteen barrels per acre. According to the best estimates there are ten million acres of land in the five states bordering on the Gulf of Mexico which are well suited to rice cultivation. Of these, Florida contains at least three million acres. But little attention, however, has been paid to the cultivation of this crop in the peninsular state, the total production in 1912 being reported a little short of fifteen thousand bushels, which had a value of $22,600. In the localities where it has been raised most successfully, the product has equalled the best reported in the larger producing states. That the industry may be indefinitely and profitably extended in this state has been demonstrated by the results already accomplished.

SUGAR

The growth of sugar cane in Florida years ago passed beyond the stage of experiment. The cane is grown in every county and section of Florida, and few crops are raised with less expenditure of labor or with greater returns. Almost every farmer has his own "cane patch," from which he secures his supply of syrup for home consumption. In this indiscriminate way, sixty-eight thousand barrels of syrup were produced in Florida in 1912, and its value was more than nine hundred and twenty thousand dollars. But very little of this product was exported.

The investments of the Disston Land Company in the Kissimmee valley a number of years ago demonstrated the possibility of this industry on a large commercial scale. One of the best equipped sugar mills in the world was erected on this plantation and its operations for a few years showed magnificent financial results. The discontinuance and the failure of this enterprise were due to circumstances outside of the natural conditions which, under other management, would make Florida one of the greatest sugar-producing sections in the world.

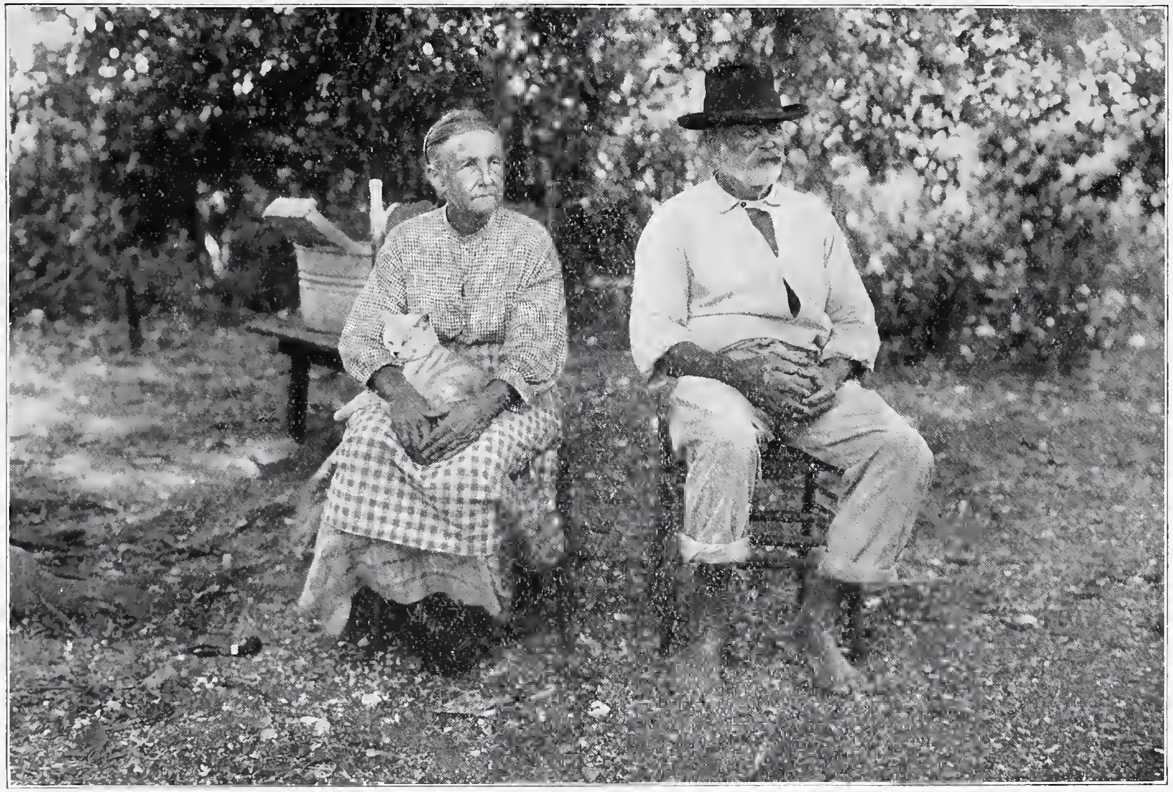
It has been demonstrated that the sugar content of the cane grown in Florida is larger, by a considerable percentage, than that of the cane produced in Louisiana, which is one of the richest sugar districts in the world. The reason for the difference lies in the fact that the climatic conditions in Florida permit the cane to reach its full maturity and the largest development of its saccharine content uninterrupted by early frosts. This is an industry with possibilities unsurpassed by any other natural resource of Florida. It would seem that this development should be of inestimable commercial value and that it will, some time in the future, bring millions of dollars annually into the state.

STARCH

But little attention has been directed in Florida to the cultivation of the cassava plant. Here and there small areas have been planted to the root and without exception it has come to luxuriant growth. Naturally statistical demonstration of the plant as a source of a great industry has not yet been tabulated, but in the opinions of experts who have studied seriously, there is no reason why starch from this source should not become a large item of manufacture and export from this state.

FIGS

Figs of several varieties grow in every part of the state. They flourish in luxuriance even in neglected corners and on otherwise useless soils, and they produce abundantly. The Florida house-



A PAIR OF ORIGINAL "FLORIDA CRACKERS"

keeper finds many uses for them as a raw food and in preserves or dried, which far surpass the imported article in palatableness. The fig in its ordinary condition of ripeness can be shipped only for short distances, for even under refrigeration it decays quickly. It is a fruit that must be canned or preserved where it is grown, and a moderate amount of capital invested in such canning establishments would doubtless pay large returns. This has been demonstrated on a small scale in many sections of the state and in the kitchens of half the housewives of Florida.

PECANS

The states that border the Gulf of Mexico have been proven to be particularly adaptable to the raising of pecans, for in this great territory the tree is indigenous in its wild state and its cultivation has produced the best financial results. In the western part of the state, at Tallahassee and elsewhere, are trees of native stock known to be eighty years old, still in active and prolific bearing.

Several varieties of thin-shelled pecans have been developed by careful breeding, and propagated on native stock. These nuts command high prices in the markets and the demand far exceeds the supply. Thousands of acres in southern Georgia and in the northern counties of Florida have been set to these choice varieties, and a valuable commerce has already been built up. Although it is still in its infancy, its value has been established.

The pecan tree is of comparatively slow growth, reaching bearing age from the fifth to the seventh year. The productive capacity is reached in fifteen to twenty years and this continues to the old age of the tree. This productive limit of the tree under cultivation is practically unknown, for the industry in this section is less than twenty years old, but there is reason to believe that it will continue for half a century and probably far beyond this limit. The tree has few enemies, it is of hardy growth like its near relative, the hickory, and a mature grove has been known to yield a net annual profit of $200 an acre for many successive years. While the pecan has reached its perfection in the northern portion of Florida, experiments seem to have proved that it will flourish quite as vigorously as far south as Tampa and possibly beyond that limit.

There are numerous other resources of soil, indigenous or imported, which present possibilities of large and valuable development.

When these shall be brought to the attention of scientists, there is little reason to believe that Florida will not surpass every other state in the Union in the variety of its commercially valuable soil products and their application to the arts and manufactures of the world.

CHAPTER XI

THE TREES OF FLORIDA

TO COMPILE a complete list of the trees, shrubs and vines that grow within the limits of any given territory, is no slight task. The difficulty is increased where, as in Florida, normal climatic conditions vary from those of the temperate zone to those of the tropics, and where the soils invite the growth of practically every variety of vegetation that the climate may permit. The preparation and proper classification of such a list demand the services of the highest skill and years of time and study.

The United States contains about five hundred indigenous trees. Two hundred and twenty of these have been found in Florida. To these have been added almost one hundred varieties, brought from similar climatic and soil conditions in many parts of the earth. The naturalization of trees and plants is the work of years, before the adaptation to changed locations can be pronounced entirely successful. At the present time elaborate experiments are being carried on near the coasts of both ocean and gulf in the southern part of the state, in acclimating a number of varieties of the Eucalyptus and Annona families. It is practically certain that these efforts will add materially to the number of valuable trees in the state as well as in the United States.

In the list given in this article, it will be noted that under the head of Citrus are included all the orange, lime, tangerine, lemon, grapefruit and kumquat trees grown in Florida. A separation and classification of these, similar to that of the oaks, would increase the list by twenty or more. Therefore, it appears that a fully itemized classification of the trees, indigenous and naturalized, in Florida would bring the total much above three hundred.

LISTING THE TREES

So far as is known, the first classification of the trees of this state, was undertaken and completed by Prof. Alvin H. Curtis, between 1880 and 1890, under the direction of the United States Department of Agriculture. Its accuracy has made it a standard and the basis for subsequent investigations.

The Forestry Department of the Florida Federation of Woman's Clubs, under the able direction of Mrs. Kirk Munroe of Cocoanut Grove, appreciating the necessity of a more complete and up-to-date enumeration of the trees of the state, undertook the work in 1908 and 1909. The services of Dr. John Gifford, as editor, were secured and the results were published under copyright in the latter year.

Of Doctor Gifford's ability and success no better evidence is needed than the published work itself. For years he was at the head of the Department of Forestry in Cornell University. His interest in Florida, his training in accurate and scientific methods of study and years devoted to the flora of the state, have made him an authority. The results of his work are reproduced here by permission for the first time outside of the copyrighted pamphlet, in which they originally appeared.

The list prepared by Doctor Gifford gives the scientific name of each specimen first, next the common name and the general section or sections of the state in which it is to be found, with occasional comments that will prove of much interest to the reader or to the student.

A LIST OF THE TREES OF FLORIDA

BY DR. JOHN GIFFORD

Indigenous Trees

It is difficult to make a complete list for several reasons; first, some plants which are ordinarily bushes, under favorable environment in South Florida reach tree dimensions; second, the northern boundary of Florida is a long, arbitrary division mark and no doubt several northern species dip over this line here and there and are not always reported, and third, it is almost impossible to keep track of fresh introductions; seeds and plant material of various kinds are coming into this state constantly from all parts of the world. The terms "native" and "indigenous" are here used in the same sense—they refer to plants which are and have always been here naturally, as far as is known; "naturalized" refers to plants which have been intro-

BANANA TREE WITH FRUIT

LIVE OAK PARK NEAR TALLAHASSEE

TROPICAL PLANTS AT FORT MYERS

WATER OAK

duced, but which have such a hold that they would continue to grow and extend, at least hold their own, even if man and all his works were wiped off the earth.

Pinus Taeda	**Loblolly Pine.**	North Florida. Valuable timber tree.
Pinus Serotina.	**Pond Pine.**	North Florida. Atlantic and Gulf coasts.
Pinus Clausa.	**Sand Pine.**	Local on coasts of North Florida on sand dunes.
Pinus Echinata.	**Shortleaf Pine.**	Western Florida. Chattahoochee region. Good timber tree.
Pinus Glabra.	**Spruce Pine.**	West Florida. Chattahoochee region.
Pinus Palustris.	**Longleaf Pine.**	The great timber and turpentine tree of North Florida.
Pinus Caribaea.	**Cuban Pine.**	The common timber pine of South Florida. Grows also in West Indies and Central America.
Taxodium Distichum.	**Bald Cypress.**	A valuable timber tree.
Taxodium Imbricarium.	**Pond Cypress.**	A species recently named by Harper.
Thuja Occidentalis.	**Arborvitae.**	Various cultivated varieties of this tree commonly planted for shade and ornament. Probably does not extend naturally southward further than the mountains of Georgia.
Chamaecyparis Thyoides.	**White Cedar.**	A very light, durable timber, valuable for boat building, etc. Probably extends into North Florida in swamps near the coast.
Juniperus Barbadensis.	**Southern Red Juniper.**	The famous pencil cedar of Florida. Some years ago forests of cedar and live oak were reserved in Florida and elsewhere on the coast to insure a future supply of these valuable timbers for our navy. These were of course abandoned when steel replaced wood for this purpose. These, however, were our first national reserves.
Tumion Taxifolium.	**Florida Torreya.**	
Taxus Floridana.	**Florida Yew.**	The above two trees are of interest because they are found only on the limestone bluffs along the eastern bank of the Apalachicola River.
Thrinax Parviflora.	**Silktop Palmetto.**	Southern Florida Keys and Bahamas.
Thrinax Microcarpa.	**Silvertop Palmetto.**	Southern Keys.
Sabal Palmetto.	**Cabbage Palmetto.**	Common throughout Florida, giving to the landscape an appearance characteristic of Florida and a tree which, I am sorry to say, is often sacrificed for the bunch of cabbage at its growing tip.
Pseudophoenix Sargentii.	**Sargent Palm.**	Southern Keys and the Bahamas. Resembles the date palm. Getting very scarce.
Roystonea Regia.	**Royal Palm.**	This majestic tree reaches its optimal growth in Cuba, of which country it is emblematic; it adorns the Cuban two-cent postage stamp and coat-of-arms and its rich berries fatten many swine for their Christmas festivities. Extensively planted in South Florida and appears to be indigenous in several patches in the neighborhood of the Everglades.

Cocos Nucifera. **Cocoanut.**

One of the most beautiful and useful members of the plant world, yielding food, drink and shelter to many primitive peoples of the world. This tree grows in sandy soil along the sea-shores of Tropical Florida and although most of the nuts were planted by the hand of man, undoubtedly some have sprung from seeds which have washed ashore and been buried in seaweed and sand on the beach. The original home of the cocoanut is probably not known and since it grows as well in South Florida as elsewhere, it deserves to be listed at least as a naturalized member of our silva.

Washingtonia Filamentosa. **Fanleaf Palm.**

A native of our Southwest, but often planted in Florida.

Juglans Nigra. **Black Walnut.**

Northern Florida.

The butter-nut (*Juglans Cinerea*) apparently skips Florida, although it is reported as growing wild in the interior of the West Indies. A walnut (*Juglans Insularis*) is also reported from Cuba.

Hicoria Pecan. **Pecan.**

The king of nuts extensively cultivated in improved form in North Florida. Both the words "hickory" and "pecan" are probably of Indian origin. It is quite probable that some Spanish tree names such as "Ucare" are corruptions of hickory since hickory has been extensively used by West Indian peoples for barrel and hogshead hoops.

Hicoria Minima. **Bitternut.**

Apalachicola region.

Hicoria Aquatica. **Water Hickory.**

Northern Florida.

Hicoria Ovata. **Shagbark.**

I am not certain whether this grows in Florida or not, but I presume it does extend southward over the border in West Florida.

Hicoria Alba. **Mocker Nut.**

Northern Florida.

Hicoria Glabra. **Pignut.**

Northern Florida.

Myrica Cerifera. **Wax Myrtle.**

Yields candle wax.

Myrica Inodora. **Odorless Myrtle.**

Near Apalachicola.

Leitneria Floridana. **Corkwood.**

A rare small tree of the swamps of Northwest Florida near Apalachicola. Of interest because of the lightness of its wood, used in place of cork. Named for the German naturalist Leitner who was killed in Florida during the Seminole War.

Salix Nigra. **Black Willow.**

Common willow throughout Florida.

Salix Longipes. **Longstalk Willow.**

Throughout Florida.

Populus Deltoides. **Cottonwood.**

Northern Florida.

Betula Nigra. **Black Birch.**

Northwestern Florida.

Betula Lenta. **Sweet Birch.**

Northwestern Florida.

Ostrya Virginiana. **Hornbeam.**

Northern Florida.

Carpinus Caroliniana. **Blue Beech.**

Northern Florida.

CABBAGE PALM—ON THE SEASHORE

MANGO TREE

Fagus Americana. — **Beech.**

Northern Florida.

Castanea Pumila. — **Chinquapin.**

Northern Florida.

Castanea Dentata. — **Chestnut.**

Although it may not grow wild in Northern Florida it has been planted here and there.

Quercus Alba. — **White Oak.**

Northern Florida.

Quercus Minor. — **Post Oak.**

Northern Florida.

Quercus Chapmani. — **Chapman Oak.**

On the coast of North Florida.

Quercus Lyrata. — **Overcup Oak.**

Northern Florida.

Quercus Michauxii. — **Cow Oak.**

Northern Florida.

Quercus Velutina. — **Yellow Oak.**

Northern Florida.

Quercus Catesbaei. — **Turkey Oak.**

Northern Florida.

Quercus Digitata. — **Spanish Oak.**

Northern Florida.

Quercus Marilandica. — **Black Jack.**

Northern Florida.

Quercus Nigra. — **Water Oak.**

Northern Florida.

Quercus Laurifolia. — **Laurel Oak.**

Most common and of its largest size in Eastern Florida.

Quercus Brevifolia. — **Blue Jack.**

Northern Florida.

Quercus Phellos. — **Willow Oak.**

Northern Florida.

Quercus Pagodaefolia. — **Red Oak.**

Extends to Northern Florida according to Sargent.

Quercus Coccinea. — **Scarlet Oak.**

Northern Florida.

Quercus Texana. — **Texas Red Oak.**

Extends to Apalachicola River according to Sargent.

Quercus Palustris. — **Pin Oak.**

Northern Florida.

Quercus Rubra. — **Leopard Oak.**

Extends to Florida according to Small.

Quercus Virginiana. — **Live Oak.**

Excellent timber tree, common in Florida, also Mexico, Cuba and Central America. These sturdy broadspreading live oaks draped with Florida moss form a very characteristic feature of the Florida landscape.

Ulmus Americana. — **White Elm.**

Northern Florida.

Ulmus Alata. — **Wahoo.**

Northern Florida.

Ulmus Fulva. — **Slippery Elm.**

Northern Florida.

WHITE OLEANDER IN BLOOM

Planera Aquatica. **Planer Tree.**

Northern Florida.

Celtis Occidentalis. **Hackberry.**

Throughout Florida.

Celtis Mississippiensis. **Sugarberry.**

Throughout Florida.

Morus Rubra. **Red Mulberry.**

Common throughout the State.

Morus Nigra. **Black Mulberry.**

Commonly planted for its large, black, juicy fruits. Probably originally came from Persia.

Morus Alba. **White Mulberry.**

From China. Introduced mainly for silk-worm food.

Broussonetia Papyrifera. **Paper Mulberry.**

From Japan. Common throughout the State.

Ficus Aurea. **Golden Fig.**

South Florida and the West Indies. A striking weed tree in the forest. Grows first on limbs of other trees, throws down aerial roots to the ground and finally chokes and kills the tree upon which it started.

Ficus Populnea. **Poplarleaf Fig.**

South Florida and the West Indies. Easily propagated from cuttings and might prove a satisfactory shade tree for South Florida.

Ficus Carica. **The Fig.**

Cultivated throughout the South for its fruits.

Coccolobis Uvifera. **Sea Grape.**

Common on the sea shore of Southern Florida, also West Indian.

Coccolobis Laurifolia. **Pigeon Plum.**

South Florida and West Indies. A fine tree in the hammocks of Southern Florida. (A hammock is a rich hardwood jungle. It is probably an old Indian word and the old spelling ''hamak'' is sometimes still used.)

Pisonia Obtusata. **Blolly.**

Sea beaches and shores of brackish lagoons. Tropical Florida.

Magnolia Glauca. **Sweet Magnolia.**

Common throughout the State to Biscayne Bay.

Magnolia Foetida. **Evergreen Magnolia.**

Northern Florida.

Magnolia Macrophylla. **Large Leaf Magnolia.**

Northern Florida.

Magnolia Fraseri. **Frazer Magnolia.**

Chattahoochee region.

Magnolia Pyramidata. **Magnolia.**

Chattahoochee region.

Liriodendron Tulipifera. **Tulip Tree.**

A very beautiful and useful tree probably extending over the line into Florida.

Annona Glabra. **Pond Apple.**

Southern Florida. Also called custard-apple. A good stock on which to bud other annonas.

Persea Borbonia. **Red Bay.**

Common throughout Florida. Called sometimes ''Florida mahogany,'' but should never be confounded with the true mahogany which grows on the Keys.

Persea Pubescens. **Swamp Bay.**

The term ''bay'' sometimes applied to trees may come from the French *baie,* meaning berry; it may have to do with the color of the wood, although the word *bay* in this sense is

AUSTRALIAN PINES (CASUARINA)

FLORIDA BAMBOOS NEAR FORT MYERS

usually only applied to horses and in the case of ''bay-wood'' sometimes applied to mahogany; *bay* may refer to the ''Bay Islands'' in the Gulf of Honduras, a great mahogany centre.

Persea Gratissima. — **Avocado.**

The famous salad fruit, now so extensively cultivated in South Florida. Practically naturalized in Southern Florida.

Ocotea Catesbyana. — **Lancewood.**

The term lancewood is applied to many trees. The true lancewood is yielded by members of Annona family, *Bocagea laurifolia* and *virgata* ''white and black lancewood.'' Large sized pond-apples might yield a light elastic wood of this nature.

Sassafras Sassafras. — **Sassafras.**

Northern Florida. A little used but durable and elastic aromatic wood. I have heard that the Indians used this wood in the manufacture of bows and spears.

Capparis Jamaicensis. — **Florida Caper.**

South Florida.

Liquidamber Styraciflua. — **Sweet Gum.**

Northern Florida.

Platanus Occidentalis. — **Sycamore.**

Northern Florida.

Malus Angustifolia. — **Narrowleaf Crab.**

Northern Florida.

Malus Malus. — **Wild Apple.**

Northern Florida.

Amelanchier Canadensis. — **Serviceberry.**

Probably extends into Florida.

Crataegus Crus-Galli. — **Cockspur.**

Southward to Chipola River, Florida.

Crataegus Coccinea. — **Scarlet Haw.**

South to Northern part of Florida.

Crataegus Viridis. — **Green Haw.**

Chattahoochee region.

Crataegus Apifolia. — **Parsley Haw.**

South to Central Florida.

Crataegus Flava. — **Yellow Haw.**

To Central Florida.

Crataegus Uniflora. — **Small-leaf Haw.**

To Northern Florida.

Crataegus Aestivalis. — **Summer Haw.**

To Northern Florida.

Chrysobalanus Icaco. — **Cocoaplum.**

Southern Florida.

Prunus Americana. — **Wild Plum.**

To Western Florida.

Prunus Angustifolia. — **Chickasaw Plum.**

To Central Florida.

Prunus Umbellata. — **Black Sloe.**

Northern Florida.

Prunus Serotina. — **Black Cherry.**

Northern Florida.

Prunus Caroliniana. — **Laurel Cherry.**

South to Biscayne Bay.

Prunus Sphaerocarpa. — **West India Cherry.**

South Florida to West Indies.

Prunus Persica. **Peach.**

From China. Commonly cultivated.

Zygia Unguis-Cati. **Florida Cat's Claw.**

South Florida and West Indies.

Lysiloma Latisiliqua. **Wild Tamarind.**

A beautiful shade tree on the Keys. Has the reputation of being a very valuable cabinet wood. Excelling, according to Nuttall, the mahogany ''in its variable shining tints, which appear like watered satin.''

Acacia Farnesiana. **Popinac.**

Seems to be a native of America, Australia and Africa. Introduced into almost every locality with warm climate.

Leucaena Glauca. **Leucaena.**

Keys, West Indies, Texas and Mexico.

Cercis Canadensis. **Redbud.**

To Central Florida.

Gleditsia Triacanthos. **Honey Locust.**

Northern Florida.

Gleditsia Aquatica. **Water Locust.**

Northern Florida.

Robinia Pseudacacia. **Locust.**

Northern Florida.

Ichthyomethia Piscipula. **Jamaica Dogwood.**

A common and very valuable timber tree for South Florida. Might be used to advantage as a shade and ornamental. Grows quickly, has an abundance of pea-like flowers in clusters which honey bees are fond of. As the name indicates, it is a fish poison. The bark and twigs are bruised and lowered in a basket into the water. A poison is dissolved which stupifies fish that come near it. They float to the surface and are easily captured. This tree grows well from seeds and its propagation should be encouraged.

Guaiacum Sanctum. **Lignum Vitae.**

Famous, hard, heavy, lasting wood on the Lower Keys and West Indies. Scarce.

Fagara Fagara. **Wild Lime.**

South Florida and West Indies.

Fagara Clavi-Hercules. **Prickly Ash.**

Because of its prickly nature is sometimes called ''sting-tongue,'' ''wait-a-bit'' and ''tear blanket.''

Fagara Flava. **Yellow Wood.**

Florida Keys.

Fagara Coriacea. **Satin Wood.**

Florida Keys.

Ptelea Trifoliata. **Hop Tree.**

Extends to Northern Florida and probably crosses the line.

Amyris Elemifera. **Torchwood.**

South Florida and West Indies.

Simarouba Glauca. **Paradise Tree.**

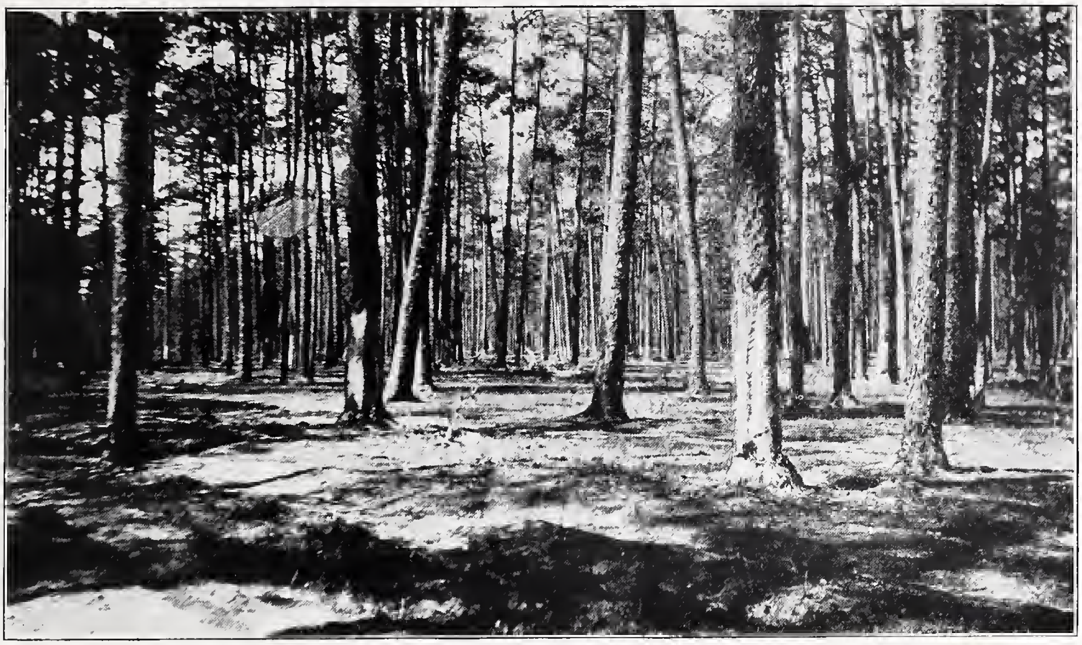
South Florida and West Indies. A pretty, quick growing tree in the hammocks. Would make a handsome avenue tree.

Ailanthus Glandulosa. **Ailanthus.**

A Chinese tree widely naturalized throughout the United States.

Bursera Simaruba. **Gumbo Limbo.**

South Florida and West Indies. Grows easily from a cutting or large limb stuck in the ground, frequently used in this way for live fence posts. Grows very quickly and has a very striking bronzy red trunk with papery bark. The term Gumbo limbo is probably a negro corruption of the term gum-elemi.



A PINE FOREST

MANY OF FLORIDA'S HIGHWAYS ARE SHADED BY A DOZEN VARIETIES OF TREES, STANDING SO CLOSE THAT THEIR BRANCHES INTERTWINE

Melia Azedarach. **China Berry.**

Called also *"Lilaila."* In the northern part of the State and along the Gulf Coast a variety of this tree, *Umbraculiformis* or "Umbrella China Tree," or "Texas Umbrella Tree," is the favorite tree for shade and ornament. Although a native of Persia, is now naturalized by cultivation in the Southern United States.

Swietenia Mahagoni. **Mahogany.**

Called also *madeira,* the latter word being simply the Spanish for "wood." Common on the Keys and parts of the southern mainland. The king of all woods. Something ought to be done to encourage the perpetuation of this, our choicest native hardwood, in the only part of the mainland of the United States where it can possibly grow.

Drypetes Lateriflora. **Florida Plum.**

Also called "whitewood." South Florida and West Indies.

Drypetes Keyensis. **Guiana Plum.**

Also called "whitewood." South Florida and West Indies.

Gymnanthes Lucida. **Crabwood.**

Southern Florida and West Indies. Some say this wood is poisonous. It is, however, a very pretty wood and is often used in the manufacture of canes, paper-knives and similar articles.

Hippomane Mancinella. **Manchineel.**

Southern Florida and the West Indies. A tree to be shy of; fortunately not common on the mainland. Poisonous to the touch to many people, producing a distressing dermatitis worse than poison ivy. It is called "guao" in Cuba, and I have known persons who have handled it without knowing suffer agonies with face and hands a solid mass of large blisters. It has a small fruit of pleasant appearance which might be eaten by children with dire results.

Metopium Metopium. **Poison Wood.**

Very common in Southern Florida. Poisonous, and when bruised exudes a gum which blackens the trunk of the tree. One of the first trees to come up after hammock land has been cut and burnt.

Gordonia Lasianthus. **Loblolly Bay.**

Northern Florida. Blolly used for *Pisonia longifolia* may be a corruption of the common term "loblolly"; "loblolly" on shipboard is usually applied to a thick oatmeal gruel. It is also applied to a stock or "mess" of medicines. The old-field-pine is called loblolly or frankincense-pine. It is a sailor's word and is probably very loosely applied.

Gordonia Altamaha. **Franklinia.**

Although not a native of Florida is at present only known in cultivation. It was found growing wild on the Altamaha River, Georgia, but has not been seen in the wild state since 1790.

Canella Winterana. **Cinnamon Bark.**

Keys. This yields the wild cinnamon bark of commerce, somewhat used as an aromatic stimulant and tonic.

Rhus Coppallina. **Sumac.**

Northern Florida.

Cyrilla Racemiflora. **Ironwood.**

Florida and West Indies.

Cliftonia Monophylla. **Titi.**

Northern Florida.

Ilex Opaca. **Holly.**

Northern Florida. Well known holly used for Christmas decoration.

Ilex Cassine. **Dahoon.**

Common in Western Florida, a tea bush to which also remarkable medicinal properties are ascribed by the country people.

Ilex Paraguensis.

Is the famous maté. The common tea drink of Uruguay and Paraguay.

Ilex Vomitoria. **Yaupon.**

From the leaves of this was made the famous "black drink" of the Indians. It is said that Indians came to the coast every year to drink it. As its specific name indicates, it has emetic and purgative effects.

Ilex Decidua. **Deciduous Holly.**

Western Florida.

Gyminda Griesbachii. **False Boxwood.**

Called by Small, False Boxwood. Keys.

Schaefferia Frutescens. **Yellow Wood or Boxwood.**

Sometimes used as a substitute for boxwood; a common use for boxwood is in the manufacture of mechanics' rules. Keys and southward.

Acer Floridanum. **Sugar Maple.**

Western Florida.

Acer Saccharinum. **Soft Maple.**

Western Florida.

Acer Rubrum. **Red Maple.**

Throughout Florida.

Rulac Negundo. **Box Elder.**

Northern Florida.

Sapindus Saponaria. **Soapberry.**

Southern Florida.

Sapindus Marginatus. **Wild China.**

Northern Florida.

Exothea Paniculata. **Inkwood.**

Southern Florida and West Indies.

Hypelate Trifoliata. **White Ironwood.**

Keys and West Indies.

Reynosia Latifolia. **Darling Plum.**

Southern Florida.

Krugiodendron Ferreum. **Black Ironwood.**

Southern Florida.

Rhamnus Caroliniana. **Indian Cherry.**

Northern Florida.

Colubrina Reclinata. **Naked Wood.**

Keys and West Indies.

Carica Papaya. **Pawpaw.**

I am not certain whether this should be called a tree or not, and although it is not indigenous it has become naturalized in Southern Florida. It yields fine melon-like fruits in great profusion and because of a ferment which it contains is considered a great aid to digestion.

Tilia Floridana. **Florida Linden.**

Jackson County, Fla.

Tilia Pubescens. **Basswood.**

Probably extends into Northern Florida.

Tilia Pubescens. **Wahoo.**

Northern Florida.

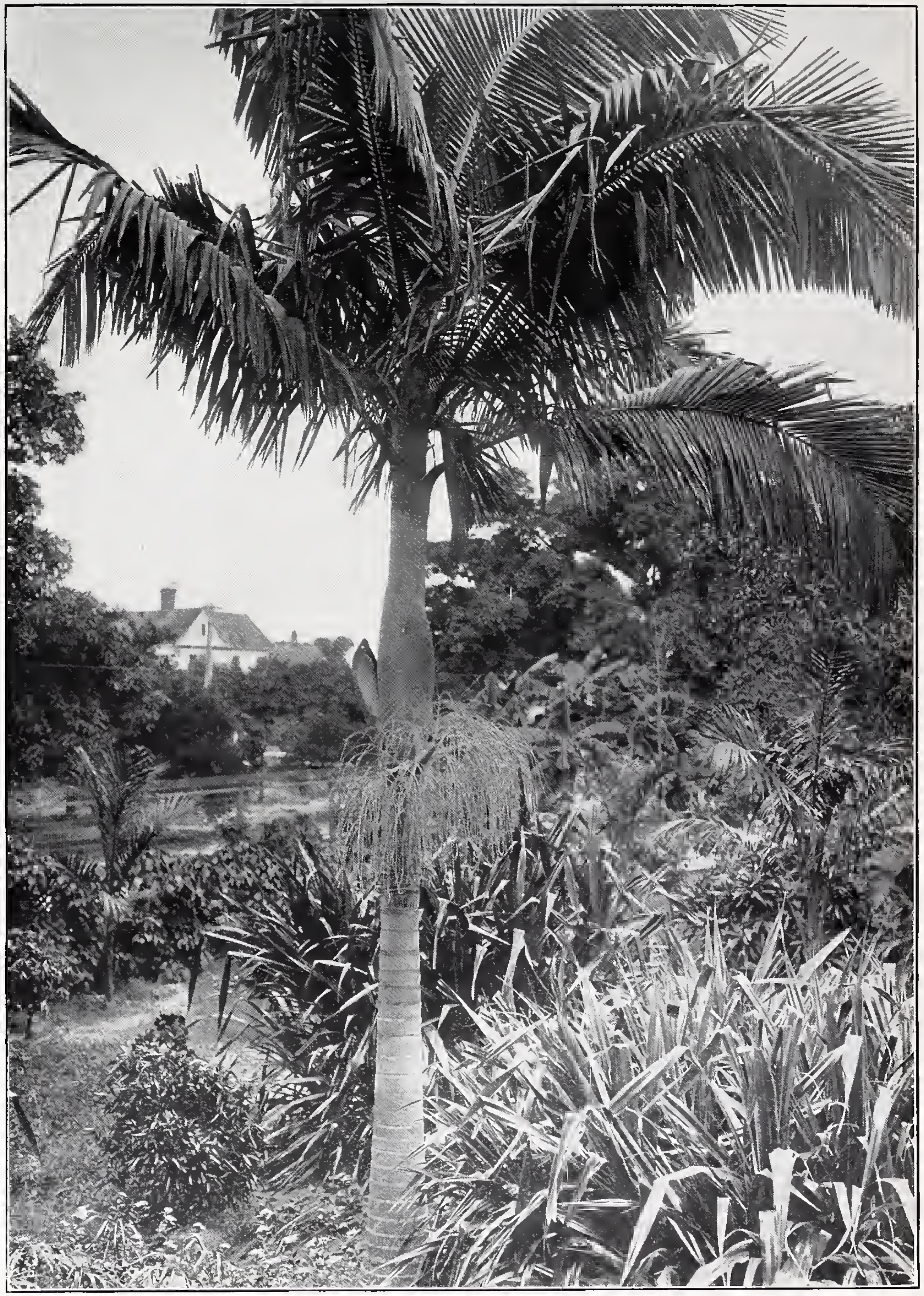
Tilia Heterophylla. **White Bass Wood.**

Western and Central Florida.

Rhizophora Mangle. **Red Mangrove.**

South Florida and the West Indies. A wonderful tree, grows in salt water and of great value in consolidating muddy shores; it has been called the "Land Former." Deserves to be protected because of the protection it affords to exposed shores in times of storm. Planta-

PALMS AT LAKE HARNEY



SEAFORTHIA ELEGANS, PALM IN BLOOM

tions on the Keys in the shelter of mangroves suffered little damage in the great storm of the fall of 1906, while those exposed to the fury of the waves bearing floating wreckage were ruined. Seeds of this tree have been sent to the Hawaiian Islands to be planted for this purpose, and when the mangrove takes hold along the line of the railroad to Key West it will safely protect it against the severest storms.

Eugenia Buxifolia. **Gurgeon Stopper.**
Spanish Stopper.
South Florida and West Indies.

Eugenia Monticola. **Stopper.**
White Stopper.
Southern Florida.

Eugenia Garberi. **Garber Stopper.**
South Florida and West Indies.

Eugenia Procera. **Red Stopper.**
Keys.

Eugenia Jambos. **Rose Apple.**
A common introduced species; although a native of India it is naturalized in the West Indies. *Eugenia Micheli* is the much-prized Surinam Cherry in Dade County.

Anamomis Dichotoma. **Naked Stopper.**
South Florida.

Chytraculia Chytraculia. **Stopper.**
South Florida and West Indies.

Psidium Guajava. **Common Guava.**
Probably the greatest of all jelly producing fruits. Common throughout Florida.

Conocarpus Erecta. **Buttonwood.**
Southern Florida. Chiefly along salt shores. Highly prized for fuel.

Bucida Buceras. **Black Olive Tree.**
Keys and West Indies.

Laguncularia Racemosa. **White Mangrove**
or Buttonwood.
South Florida and West Indies. Muddy shores, common.

Aralia Spinosa. **Angelica Tree.**
Probably extends southward into Northern Florida.

Nyssa Sylvatica. **Black Gum.**
Northern Florida.

Nyssa Ogeche. **Ogeechee Lime.**
Northern Florida. Ogeechee is the name of a river in Greene County, Georgia.

Nyssa Aquatica. **Cotton Gum.**
Northern Florida.

Cornus Florida. **Flowering Dogwood.**
Northern Florida.

Oxydendrum Arboreum. **Sour Wood.**
Sorrell Tree.
Western Florida.

Xolisma Ferruginea. **Andromeda.**
West Coast.

Vaccinium Arboreum. **Farkle Berry or**
Sparkle Berry.
Northern Florida.

Icacorea Paniculata. **Marlberry or Cherry.**
Southern Florida.

Jacquinia Keyensis. **Joewood.**

Keys. It would be interesting to know how a tree ever got such a strange name as ''joewood.'' These Keys were originally inhabited by English people coming via the Bahamas and no doubt they gave to the trees around them, in which they were interested and with which they are still surprisingly familiar, old English names. Joe was applied in England to a stale joke, to a four-penny piece, to a master or superior in the north of England, to a sweetheart in Scotland, to a Portuguese coin, and on Cape Cod to an undersized lobster. There is a weed called joe-pye weed, the meaning of which would be hard to guess.

Sideroxylum Mastichodendron. **Mastic.**

Valuable forest tree of Southern Florida. Grows to be large and is quite common, shedding an abundance of yellow fruits which are edible in case one likes the flavor. Mastic would probably make a satisfactory shade tree.

Dipholis Salicifolia. **Bustic or Cassada.**

Southern Florida and West Indies.

Bumelia Tenax. **Ironwood.**

Northern Florida.

Bumelia Lanuginosa. **Chittam Wood.**

Northern Florida.

Bumelia Lycioides. **Ironwood.**
Buckthorn.

Northern Florida.

Ant's Wood.
Bumelia Angustifolia. **Saffron Plum.**
Downward Plum.

Northern Florida.

Chrysophyllum Oliviforme. **Satin Leaf.**

Southern Florida. Highly prized as an ornamental tree because of the bright golden color on the under side of its leaves. To this same genus belongs the beautiful ''Cainito'' or Star-apple, a fruit relished by peoples of the West Indies.

Mimusops Sieberi. **Wild Dilly.**

Keys.

Sapota Zapotillo. **Sapodillo.**

Naturalized on the Keys, where it is a common fruit. Planted also on the mainland. A tree hard to start, but hardy when started, yields an everlasting wood and a gum called Chicle.

Diospyros Virginiana. **Persimmon.**

Throughout Florida. There is a curious mix-up in names in connection with the persimmon and the sapodillo just mentioned above. The black persimmon of Texas and Northern Mexico is called ''Chapote'' which is a slight modification of the name Sapota. The Spanish for sapodillo is Nispero, the name of the European Medlar. From Nispero comes the term Naseberry, a name frequently applied to the sapodillo in the British West Indies. Both words Persimmon and Sapota are probably of Indian origin, the one North American and the other South American.

Symplocus Tinctoria. **Sweet Leaf.**
Horse Sugar.

Probably extends southward into Northern Florida. The leaves are devoured by horses and cattle and the plant yields a yellow dye and the roots are used as a tonic.

Mohrodendron Carolinum. **Silver Bell Tree.**

Northern Florida.

Mohrodendron Dipterum. **Snowdrop Tree.**

Northern Florida. This genus was named for Dr. Charles Mohr, of Mobile, Ala., a learned, painstaking and unassuming botanist.

A GLIMPSE OF FLORIDA'S VIRGIN FOREST

Fraxinus Caroliniana. **Water Ash.** **Swamp Ash.**

Northern Florida. Also found in Cuba, according to Sargent.

Fraxinus Floridana. **Water Ash.**

Northern Florida.

Fraxinus Americana. **White Ash.**

Probably also extends into Florida.

Fraxinus Pennsylvanica. **Red Ash.**

Probably extends into Northern Florida.

Fraxinus Profunda. **Pumpkin Ash.**

Western Florida.

Fraxinus Lanceolata. **Green Ash.**

Northern Florida.

Chionanthus Virginica. **Fringe Tree.** **Old Man's Beard.**

Northern Florida.

Osmanthes Americanus. **Devil Wood.**

Northern Florida.

Cordia Sebastena. **Geiger Tree.**

Common ornamental tree in Southern Florida with orange or flame-colored flowers appearing throughout the year, probably introduced from the West Indies.

Bourreria Havanensis. **Strong Back.**

Southern Florida and West Indies.

Citharexylum Villosum. **Fiddlewood.**

South Florida. One must not assume from both the scientific and common names that this wood is good for fiddles, quite otherwise, because the wood is heavy and exceedingly hard. Both names are supposed to be mistakes, or rather the common name is a corruption of the French ''fidele,'' meaning true or strong, and the scientific name is merely a translation of the common name. On the other hand one softer and lighter wooded member of this genus might have been used for this purpose. Bello gives the common name ''palo de guitara'' to *C. quadrangulare* in Porto Rico and Cook says the natives make their guitars of this wood.

Avicenna Nitida. **Black Mangrove.**

Very valuable tree like the red mangrove for consolidating muddy shores.

Catalpa Catalpa. **Indian Bean.**

Catalpa is an Indian name. Western Florida.

Catalpa Speciosa. **Western Catalpa.**

The one usually planted for timber.

Crescentia Cucurbitina. **Black Calabash Tree.**

Southern Florida and West Indies.

Pickneya Pubens. **Georgia Bark.**

Northern Florida. Used as a medicine for malarial fevers.

Exostema Caribaeum. **Prince Wood.**

Keys. Highly prized as a tonic.

Guettarda Elliptica. **Nakedwood**

Southern Florida and West Indies. Called *Velvet Seed* in the Bahamas.

Viburnum Rufidulum. **Black Haw.**

Northern Florida.

Naturalized Trees

Florida possesses a larger number and greater variety of trees than any state in the Union; in fact, Florida is the only state in which the trees of the north meet the trees of the Tropics, but furthermore, in having a tropical region in the south, she is able to accommodate a much larger variety of introduced species. Many trees have been introduced and of these some have become naturalized, but there is room for many more introductions. If other parts of the world have trees of value, we should have them also, the sooner the better. This great variety of introduced species which we may hope to have some day, will ultimately add, not only to the beauty of the country, but to the resources of the state. No man can do a greater service to any state than to introduce within it a useful or beautiful tree which has not grown there before. He does a work for all time. When the Everglades are drained there will be a new field for tree-planting. In the following I have endeavored to list some of the more important introduced trees of Florida not mentioned above. Many of these have taken firm hold and are as familiar to many people (if not more so) than many of our native species.

The United States contains about 500 indigenous trees; over 200 of these may be found in the state of Florida, not including many well-known introductions, some of which are as follows:

Albizzia Lebbek. **Siris Tree of Egypt.**

Common shade tree in Nassau, where it has been dubbed *Woman's Tongue* because of the constant whispering noise made by its pods rubbing together in the wind. May be seen growing here and there in Southern Florida.

Terminalia Cattappa. **West Indian Almond.**

Common shade tree.

Bamboo, ssp.

Several species and more could be introduced to advantage.

Bauhinia, ssp.

Several species, beautiful, ornamental small trees.

Cajan Cajan. **Pigeon Pea.**

Makes a small but useful tree. Poultry are fond of its seeds and its leaves enrich the soil.

Cassia Fistula. **Shower of Gold.**

A highly ornamental and useful tree from Asia.

Cedrela Odorata. **Cigar Box Cedar.**

West Indies; several growing in Southern Florida.

Cedrela Sinensis.

An elegant Chinese tree. Will grow no doubt throughout the State.

Ceiba Pentandra. **Silk Cotton Tree.**

Several growing in Dade County.

Cinnamomum Camphora. **Camphor Tree.**

Grows well throughout the State. Well established plantations of this tree in the proper locations would probably in time bring large returns.

Citrus.

Under this head are included limes, lemons, oranges, tangerines, grapefruits and kumquats in almost endless variety.

A FLORIDA CYPRESS SWAMP

Coffea Arabica. **Coffee.**

Is grown in one or two places in Dade County and has fruited there. With care it can be raised in this climate at sea level on sandy soil. The Manatee region, according to Reasoner, raised the first berries ever produced on the mainland of the United States.

Dalbergia Sissoo. **Sissoo Tree of India.**

Makes a quick growing shade tree for Southern Florida.

Eriobotrya Japonica. **Japanese Loquat.**

Common fruit tree.

Hura Crepitans. **Sand Box Tree.**

A few planted in Southern Florida. Common in Nassau.

Lucuma Mammosa. **Mammee Sapota.**

A few have been planted in Dade and other southern counties of the State.

Mammea Americana. **Mammee Apple.**

A few planted in the southern counties.

Mangifera Indica. **Mango.**

Extensively planted in the southern counties, producing an abundance of choice fruits, some of the recent imported and improved varieties ranking with the choicest of our fruits. At the same time a valuable shade and ornamental tree.

Melicocca Bijuga. **Genip.**

Handsome tree for shade. A few on mainland and Keys of Southern Florida.

Moringo Moringo. **Horse Radish Tree.**

Southern Florida.

Nerium Oleander. **Orleander or Adelfa.**

Common, ornamental.

Olea Europaea. **Olive.**

Grows well and has been extensively planted in Florida, but does not fruit.

Paritium Tiliaceum. **Mahoe.**

A small but pretty and valuable tree.

Phoenix Dactylifera. **Date.**

Grows and fruits in Southern Florida.

Pithecolobium Saman. **Saman or Rain Tree.**

Quick growing shade tree. A tree which is said to grow in wet saline soil.

Pithecolobium Dulce.

From Mexico. One of the quickest growing trees in Southern Florida. A tree eight years old at the Subtropical Gardens has reached a height of forty feet.

Poinciana Regia. **Poinciana or Flame Tree.**

Common in Southern Florida. A native of Madagascar, but named for the first Governor of the Island of Cuba, in which country it lines the country roads and when in bloom is a wonderful sight.

Punica Granatum. **Pomegranate.**

Spondias Dulcis.

A fruit tree from the Pacific Islands.

Spondias Lutea. **Hog Plum.**

West Indies.

Tamarindus Indica. **Tamarind.**

India and Southern Florida.

Thespesia Populnea.

A beautiful shade tree for marshy places and elsewhere.

Ceratonia Siliqua. **St. John's Bread.**

A very valuable tree for Southern Florida.

Aleurites Triloba. **Candlenut Tree.**

Grows well and fruits in Southern Florida.

Kigelia Pinata. **Sausage Tree.**

Africa. Flowers and fruits at Cocoanut Grove.

Casuarina Equisetifolia.

A tree of the East Indies and Australia, but now common throughout the tropics. Grows close to the sea, and has been used in the fixation of moving dunes along the seashore. It is usually called Australian Pine, but a patch of them on Biscayne Bay is known as the "cedars." The tree has become naturalized in South Florida and young trees of this species are growing here and there on the shore, the seeds of which have no doubt been washed ashore. It is a valuable addition to the silva of the State of Florida.

Cinnamomum Cassia. **Chinese Cinnamon.**

A magnificent shelter tree, very dense and of quick growth. Will grow throughout the State.

Grevillea Robusta. **Australian Oak.**

Excellent shade tree for Southern Florida.

Casimiroa Edulis. **White Sapota.**

Of Mexico. Has fruited at Cocoanut Grove.

Cicca Disticha. **Gooseberry Tree.**

Common in Dade County. A very prolific bearer of white acid fruits.

Albizzia Julibrissin. **Acacia.**

A fine ornamental tree, a native of Asia, and a great favorite in Southern Europe. Now being extensively cultivated for ornament throughout the Southeastern States.

Anacardium Occidentale. **Cashew Apple or Cashew Nut.**

Grows well and is frequently planted in Southern Florida.

Bixa Orellana. **Annatta.**

A small tree yielding an orange-colored dye for butter color.

Caesalpinia Sappan. **Sappan Tree.**

India. Can be cut back for hedges. *Caesalpinia Echinata* yields the famous Pernambuc or Brazil wood of commerce.

Ficus Altissima. **East Indian Rubber.**

Makes excellent growth in Southern Florida.

Ficus Glomerata. **Cluster Fig.**

Of India. Grows well and bears well in Southern Florida.

Melaleuca Leucadendron. **Cajaput Tree.**

Of Australia and India. Two trees at Cocoanut Grove. Will grow on brackish land. The seed of this is as fine as grains of powdered pepper.

Eucalyptus, ssp.

Several species of this genus are growing in Southern Florida and do well wherever they can get good, deep rootage. There are over 100 species of this genus; some of these species yield excellent timber and some will grow in wet soil and aid in drainage.

Plumieria Alba. **Frangipani.**

Lucuma Rivicoa, var Angustifolia. **Ti-es or Egg Fruit.**

A Cuban tree yielding a fruit which is relished by many people. It has almost become naturalized in a few places on the Keys, fruiting in the bush surrounded by other trees and dense vines.

Araucaria Excelsa. **Norfolk Island Pine.**

A beautiful evergreen ornamental tree.

Cedrus Deodara. **Deodar Cedar.**

Of India. Grows well in parts of Florida.

Laurus Nobilis. **Apollo's Laurel.**

A small tree sometimes planted for ornament. Yields bay leaves.

Schinus Molle. **Pepper Tree.**

Common in Southern California. A few growing in Southern Florida.

SMALL COCOANUT PALM

Ricinus Communis.	**Castor Oil Tree.**

Attains the size of a small tree in South Florida. Valuable plant. Oil is very useful, seed pumice is a valuable fertilizer and the plant is not exhaustive to the soil.

Haematoxylon Campechianum.	**Logwood.**

A native of Yucatan. Naturalized in the Bahamas, and although I have never seen it in Florida, it probably has been introduced and will no doubt grow well here. It yields the famous Logwood dye of commerce.

Alnus Rugosa.	**Alder.**

North Florida.

Ulmus Floridana.	**Water Elm.**

North Florida.

Genipa Clusiaefolia.	**Seven-year Apple.**

Seashores of South Florida.

Paulownia Imperialis.	**Paulownia.**

Introduced from Japan.

Ficus Nitida.	**Spanish Laurel.**

A beautiful shade tree in Nassau and Key West. Also common in Cuba.

Ficus Religiosa.	**Sacred Bo of India.**

Growing in favor as a shade tree in Tropical Florida. Very common avenue shade tree in Cuba.

CHAPTER XII

FLORIDA'S WEALTH OF BIRD LIFE

BY CHARLES WILLIS WARD

ONE of the first English explorers who traversed the shores of Long Island mentioned the great wealth of bird life that swarmed upon the marshes, meadows and beaches. He noted enormous flocks of herons and egrets, described the roseate spoonbill and even the great scarlet flamingo which abounded in profusion. The shallow bays and inlets were frequented by enormous numbers of ducks, geese and brant, while the wealth of shore birds and waders defied description. The wooded shores supported an abundance of wild turkeys and grouse, while the passenger pigeon was spoken of as the most numerous of all the birds. No doubt, at that time all the water birds and waders, so rarely seen at the present day, ranged much further northwards on their annual migrations than during the past one hundred years. Many of the herons nested as far north as Chesapeake Bay, and probably bird life along the savannas of North and South Carolina and Virginia was as profuse in those days as any of us have ever seen during its palmiest days in Florida.

But as the white man preëmpted the rich farming lands of the Atlantic coast, the rarer and more striking birds were destroyed or driven southwards, until finally the only reminders of note now remaining of all that early wealth of bird life has been driven southwards and concentrated in the southern end of Florida.

In 1878, when the writer made his first journey along the upper reaches of the St. Johns river, the banks of that beautiful stream teemed with such rare and beautiful birds as the American egret, the snowy heron and many other varieties of herons, while great swarms of white ibis could be seen wending their way from feeding grounds to roosting places through all that portion of Florida south of Palatka.

The writer spent the winter of 1879 exploring Estero Bay, Charlotte Harbor and the Caloosahatchee river as far up as Lake Hicpochee, and during this period he gave his entire time to the study of bird life.

Again in 1880, he journeyed in a small boat down the entire length of the Kissimmee river, from Tohopkaliga lake to Okeechobee, thence around its western shore to Observation island, where he camped two weeks spending the time observing the birds on the island and exploring the rookeries along the southwest shore of the great lake. From Observation island he journeyed down the Caloosahatchee river to Charlotte Harbor where he spent the rest of the winter.

The roseate spoonbill was not an uncommon bird on the upper St. Johns and was fairly abundant along the entire course of the Kissimmee river, around the border of Lake Okeechobee and throughout the length of the Caloosahatchce river, as well as at many points along the Atlantic and Gulf coasts. The glossy ibis nested in goodly numbers along the headwaters of the Caloosahatchee; the Carolina parakeet was still abundant in the Cypress Glades along the lower Kissimmee and upper Caloosahatchee and in the Big Cypress, bordering the Everglades. The purple gallinule was a common inhabitant of all the savanna lands bordering the Kissimmee, Lake Okeechobee, throughout the Everglades and along the upper Caloosahatchee river. The great ivory billed cock of the woods still existed in goodly numbers in the Cypress Glades and in the live oak hammocks south of the Okalawhaha.

ENORMOUS NUMBERS OF BIRDS

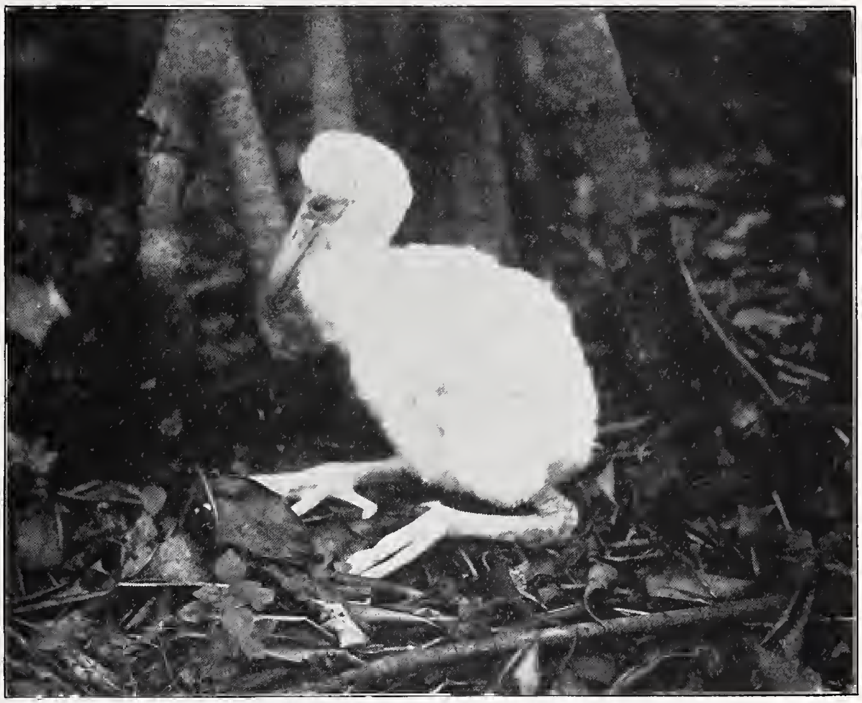
The visitor to the Florida of today would scarcely accept as truthful the descriptions of the abundance of bird life then existing in every part of the state through which I traveled. Various species of herons, many varieties of ibis, the roseate spoonbill, the gallinules, limpkins, egrets and many varieties of ducks literally colored the landscape with their enormous flights.

Some fifty nesting rookeries were visited, some of them containing upwards of one hundred thousand nests. The sand bars and mud flats were whitened with vast congregations of egrets, snowy herons and tipped ibis, profusely variegated with colorings of blue herons, Louisiana herons and reddish egrets. Great flights of roseate spoonbills tinted the sky in the early morning and at eventide, their delicate plumage flashing in the sunbeams as they wended their way to the feeding grounds, and great flocks of flamingoes added the richness of their intense scarlet plumage to Nature's ever changing color scheme. The graceful forms of numerous swallow-tailed and Everglade kites glided aloft among the clouds.

The shallow bars, bare at low tide, were covered with hundreds of

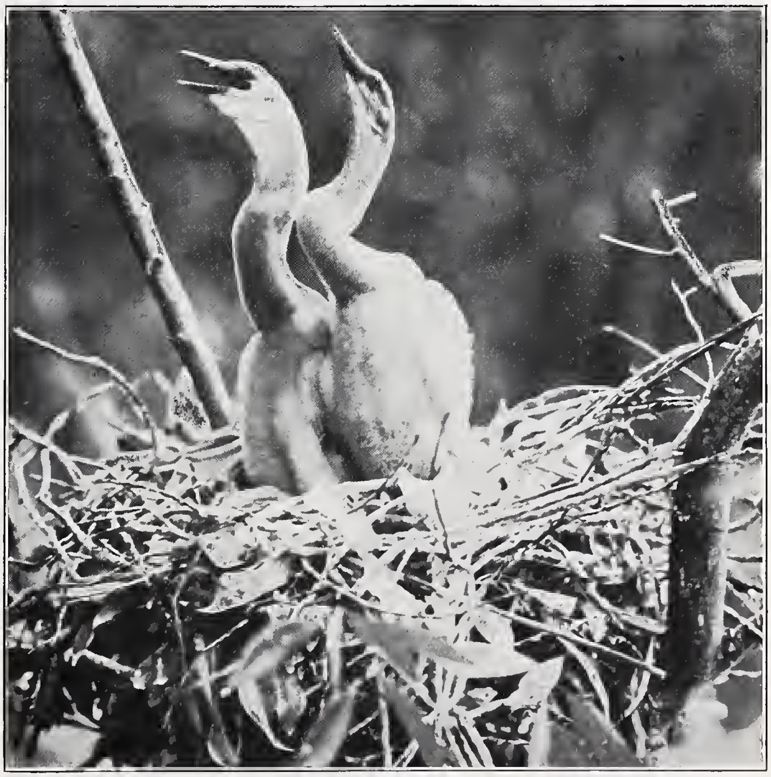
BIRD ROOKERIES IN ESTERO BAY

SOLE ENTRANCE TO MUD HOLE ROOKERY

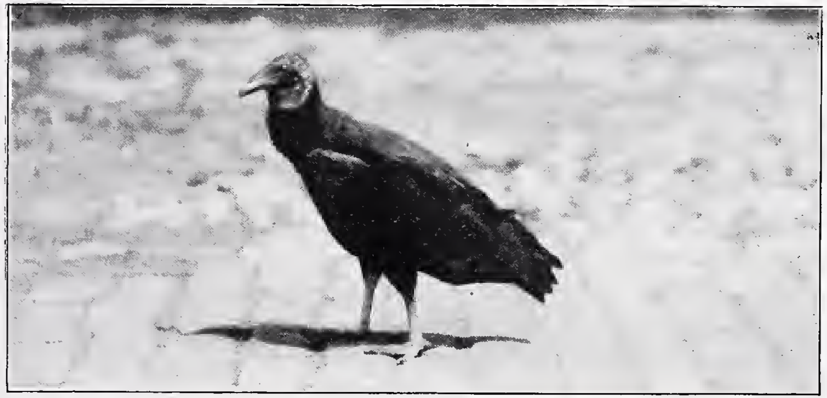


Courtesy Herbert K. Job, State Ornithologist, Connecticut

YOUNG WOOD IBIS, CAPE SABLE

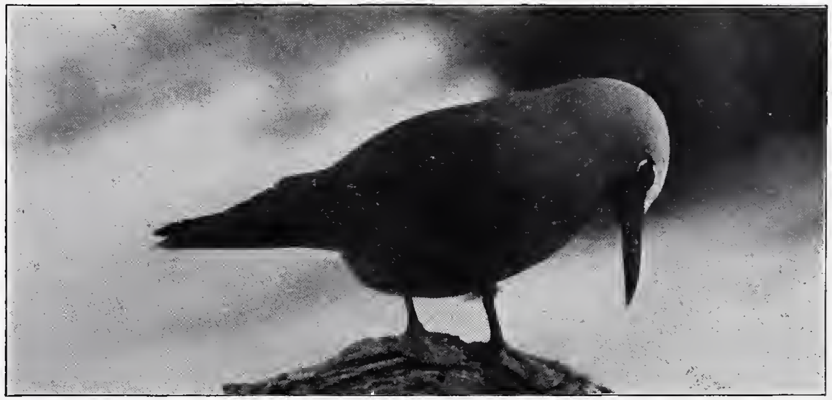


YOUNG SNAKE BIRDS OR WATER TURKEYS ON NEST



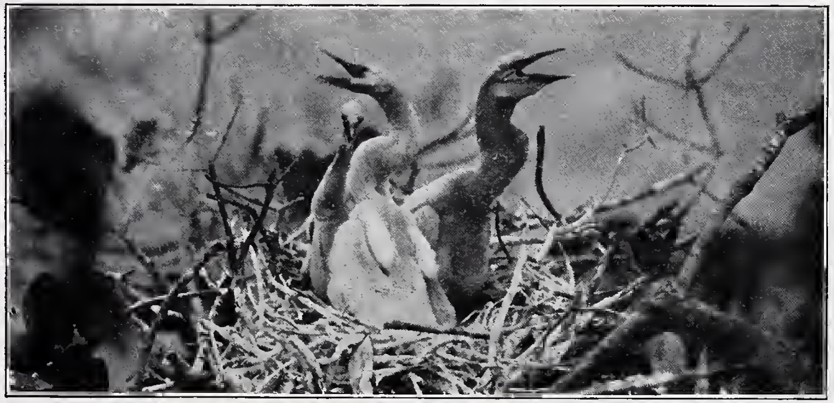
Courtesy Herbert K. Job, State Ornithologist, Connecticut

BLACK BUZZARD

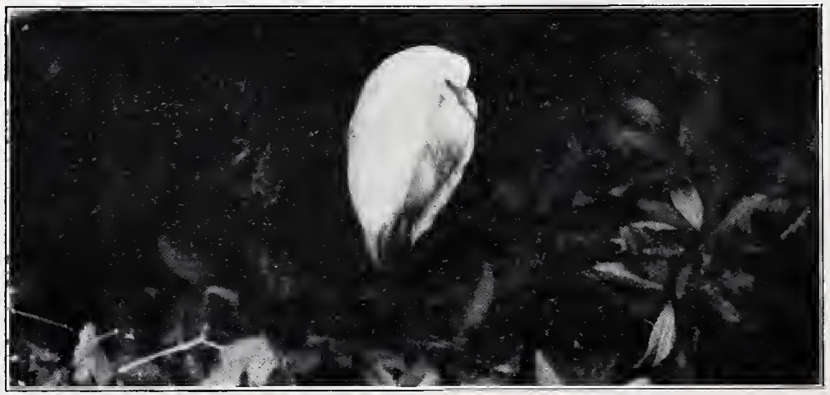


Courtesy Herbert K. Job, State Ornithologist, Connecticut

NODDY



YOUNG CORMORANTS, ALLIGATOR BAY ROOKERY



YOUNG EGRET STARVING, PARENT BIRDS SHOT

FLORIDA WATER FOWL UNDISTURBED

thousands, yes, millions of plovers, snipe, skimmers, and oyster catchers. Clouds of pelicans, cormorants, frigate birds, gulls and terns swarmed along the coast lines. Wilson's snipe, the golden plover and red-breasted snipe were too common to be considered game birds. Sand-hill cranes and wild turkeys were as abundant as domestic fowl in an inhabited country and scarcely feared the approach of man.

The shallow bays lying behind the sand keys were covered with vast swarms of feeding ducks, so careless of man's presence as to admit of a yacht sailing through their great flocks, the birds parting and swimming scarcely ten paces aside from the yacht's course. Wild turkeys often came at daybreak to within a few yards of my camp to gobble at the strange white tents, and many times they stood and gazed wonderingly at us but a few paces distant as we tramped through the dense hammock.

Fish crows perched on the peak of the tents and welcomed us with odd cries as we emerged in the morning. Great flocks of roseate spoonbills roosted in the willow thickets within a hundred yards of us. Our camping grounds were guarded by swarms of black vultures and caracara eagles which fought with the fish crows over the scraps from our cooking. Every morsel of food was pounced upon at once by an eager bird who had to fight with a score of others to retain his prize. Great flocks of wood duck, pin tails, teal, American widgeons and Florida black or dusky ducks fed in the natural meadows along the head waters of the Caloosahatchee and lower Kissimmee. The Florida great blue, or Ward's, heron was in evidence everywhere, while thousands of glossy ibis, roseate spoonbills, great white egrets, snowy egrets and other wading birds, nested in many rookeries built among the bushy thickets bordering these same meadows. The custard apple thickets along the margin of Lake Okeechobee sheltered hundreds of thousands of nesting herons, limpkins, and ibis.

The saw-grass savannas teemed with purple gallinules, crackles, bitterns, many species of rail, limpkins and myriads of song birds. Grebes built their curious floating nests in the placid pools and along the borders of currentless channels.

FLORIDA QUAIL

In the open piney woods the Florida quail existed in such profusion as was never exceeded by any game bird elsewhere unless it might have been by the valley quail of California in the days of '49. Everywhere one went, whether through saw grass, cypress glades, dense hammock, open piney woods, or along mud flat or sandy beach, by pond, lake, lagoon or down broad placid rivers, the air seemed filled with the joyous music of exuberant wild creatures, the landscape literally colored by their enormous flights. And the beauty of it all was their fearlessness of man. Neither the blood-thirsty plume gatherer nor the gunner tourist had as yet entered upon their crusade of ruthless slaughter and extermination.

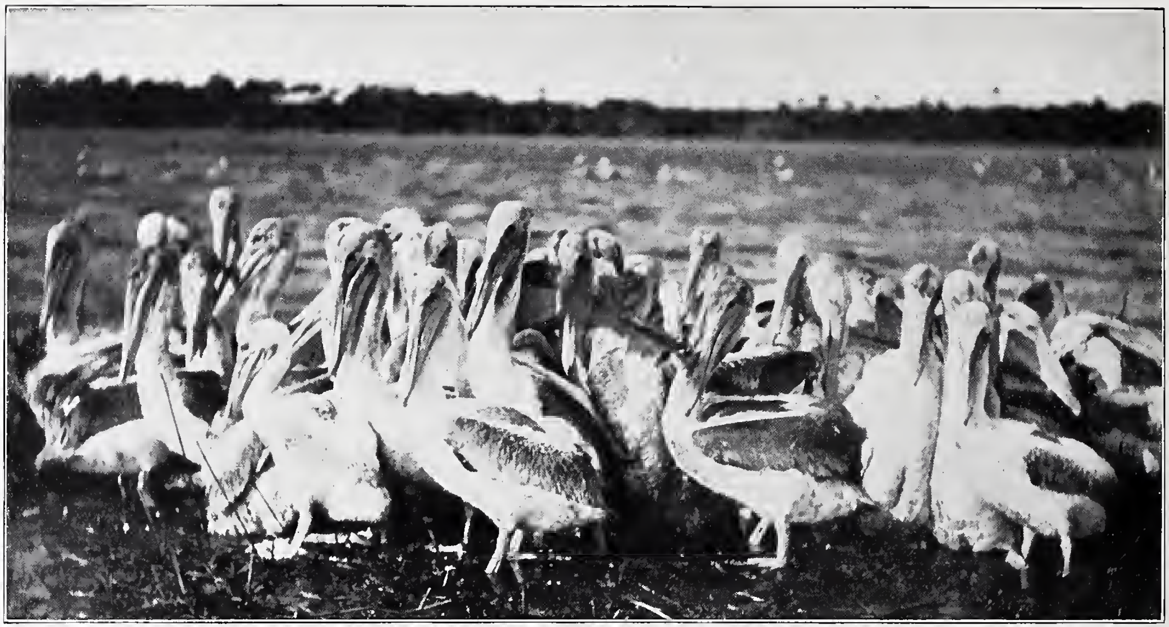
CHARLOTTE HARBOR ROOKERY

I know of no better way to impress the reader with the abundance of bird life along the Florida coast than to describe my visit to one of the great bird rookeries of Charlotte Harbor in the spring of 1879. I was then camping at Punta Rassa within the shadow of the old Government blockhouse. For days I had watched clouds of many colored herons wending their way from all points of the compass towards a large mangrove island that lay several miles to the southwest of the mouth of the Caloosahatchee river.

On a bright morning in early March I set out in a whitehall boat to sail to the bird city. A fresh, yet gentle, south breeze wafted our frail craft along at a goodly pace. As we followed the crooked channels, dodging the treacherous mud flats and ragged oyster reefs, immense schools of pompano, mullett, jack fish, sea trout, Spanish mackerel and other fish lashed the shoal waters into spray. Many of them jumped clean over the boat in their frantic rushes to escape and a few unlucky ones landed in the boat and remained there, while now and then one landed on the seat and bounded back into the water.

As we neared the bird metropolis a jumble of discordant cries came faintly across the water, soon breaking into deafening babble as we continued our approach. The crests of the bush-like mangroves were thickly spotted with various colored herons. In some parts the bushes were whitened with thousands of snowy herons, the effect resembling that of a cotton field in full crop. In other places the reddish gray of the reddish egret prevailed. Again the deep blue of the little blue heron variegated with the piebald colors of its juvenile birds produced the effect of a patchwork or crazy quilt.

The snowy heron, the Louisiana heron, little blue heron and reddish egret each had appropriated sections of the low growing red mangroves and nested in colonies by themselves. At one end of the island a great colony of tipped ibis held full control of a large area of the dwarf mangroves. The taller growing black mangroves, which arose



Courtesy Herbert K. Job, State Ornithologist, Connecticut

YOUNG BROWN PELICANS—PELICAN ISLAND

BIRDS PICKED UP AFTER RAID OF PLUME HUNTERS—ALLIGATOR BAY ROOKERY

Courtesy Herbert K. Job, State Ornithologist, Connecticut

BLACK SKIMMERS

Courtesy Herbert K. Job, State Ornithologist, Connecticut

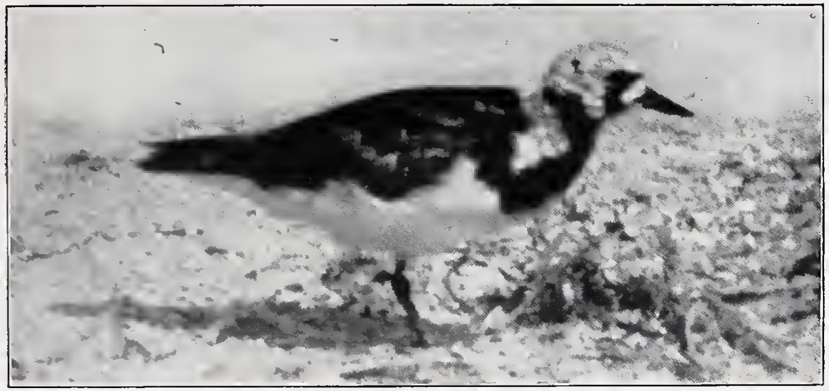
SOOTY TERNS, BIRD KEY

Courtesy Herbert K. Job, State Ornithologist, Connecticut

WARD'S HERON, YOUNG

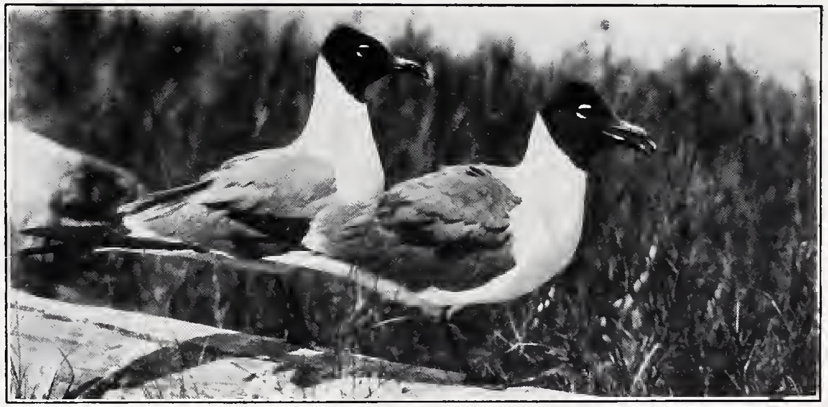
Courtesy Herbert K. Job, State Ornithologist, Connecticut

YOUNG GREAT WHITE HERON READY TO FLY



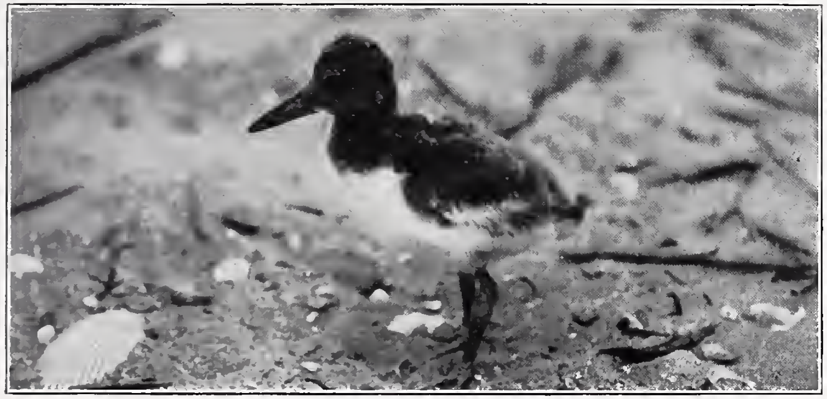
Courtesy Herbert K. Job, State Ornithologist, Connecticut

TURN STONE



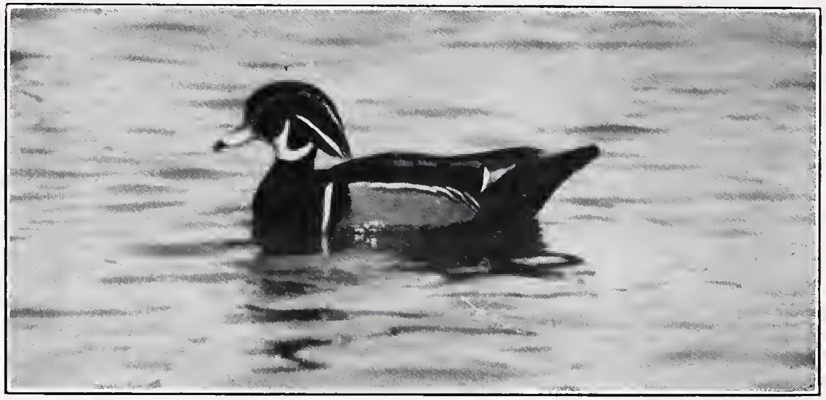
Courtesy Herbert K. Job, State Ornithologist, Connecticut

LAUGHING GULLS



Courtesy Herbert K. Job, State Ornithologist, Connecticut

YOUNG OYSTER CATCHER



WOOD DUCK

to the dignity of trees along the central portion of the island a few yards distant from the water's edge, were occupied by many thousands of great American egrets, and perched here and there in the tallest tops were nests of the great white heron (Ardea occidentalis), and the Florida great blue heron (Ardea herodias Wardi). Scattered throughout various portions of the island separated from the other nesting birds, were small colonies of yellow-crowned night herons.

Through that portion of the island which the birds had appropriated for their nesting grounds, every crotch or fork or branch that would support a nest was occupied, unless two vantage points were so close together that the birds could strike each other while sitting on the nests, as it is the habit of all these birds to place their nests at sufficient distance from each other that a quarrelsome neighbor can not reach an adjoining bird sitting on his nest. They seem to demand at least that much elbow room, or it might be called neck room.

The island, upwards of eighty acres in extent, was nearly all occupied by the rookery. A count of all the nests in a small section showed that there were many more than one hundred thousand nests of birds of all kinds on the island.

FISH CROW ROBBERS

The first time I visited this rookery very few young birds were hatched, a great majority of the nests containing eggs, while a few belated birds were still building their homes. On this occasion I noticed especially the swarm of fish crows that infested the rookery and kept a keen watch upon the nests which the birds never left unguarded. As we landed and walked towards the center of the island, our presence frightened a number of the birds away and at once the miserable robber crows dashed in and carried the eggs away. With my companion I advanced to the center of the island and sat down to watch the birds. As soon as we had seated ourselves the birds that were driven from the nests by our approach immediately returned and drove off the crows.

Upon the second visit practically all of the young had been hatched and some of them far enough advanced to stand upon the nests and gaze wonderingly at us. At this time I noticed that the older birds hung much closer to the nests than they did before the young were hatched, but in a few instances where we approached very closely, the parents left the nests for a few moments. We again saw the fish crows pounce upon the smaller birds and carry them away.

ENORMOUS AGGREGATES OF BIRD LIFE

A conservative calculation of the number of old and young birds in that rookery at that time was five hundred thousand—three hundred thousand young and two hundred thousand parent birds, and it is possible that a correct count of every individual would have disclosed from six hundred thousand to three-quarters of a million old and young birds of all descriptions. This was the largest rookery I visited during my travels in Florida, although there were other sections that contained fully as many, if not more, birds than Charlotte Harbor. At that time there must have been more than two dozen nesting rookeries, large and small, in Charlotte Harbor alone.

Estero Bay, the first enclosed sheet of water south of Charlotte Harbor, contained from twelve to fifteen rookeries of various sizes. Farther on down the coast were much larger rookeries than that in Charlotte Harbor, and in the vicinity of Marco among the Ten Thousand islands the roseate spoonbill existed, I was told, in immense quantities in addition to enormous congregations of herons, ibis and other wading birds. Tales of an immense rookery of flamingoes somewhere east of Cape Sable also reached me. In fact, the mullet fishermen who traversed up and down the coast, reported that the mangrove region along the whole west coast of Florida contained a continuous line of bird rookeries from Tampa to the southernmost point of the peninsula, and the same was true of the east coast. The central portion of the state, especially along the Kissimmee river and throughout the Everglades, contained numerous nesting rookeries for the wading birds which had not yet been disturbed by the plume hunter or the hunter tourist.

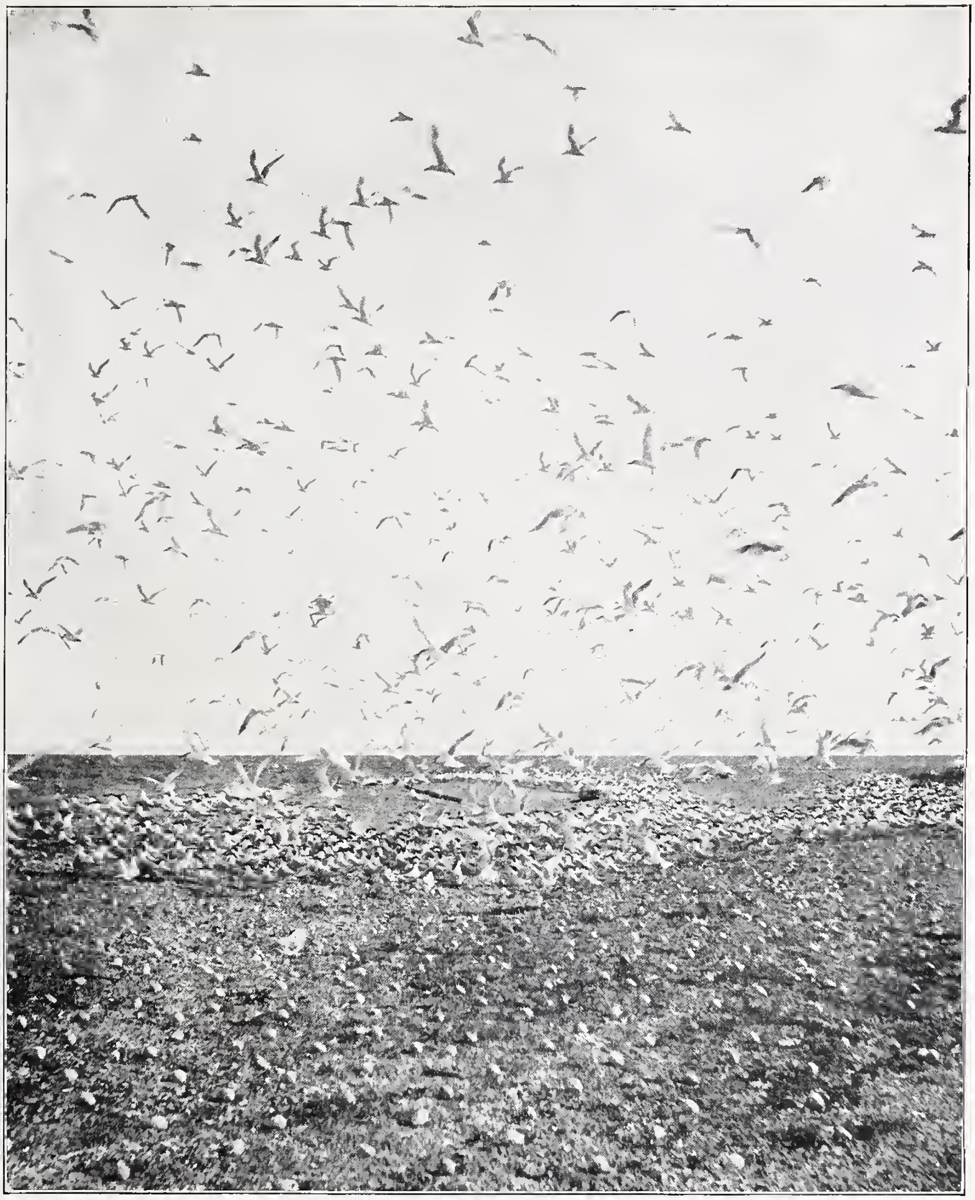
DESTRUCTION OF SIX YEARS

Again I visited Punta Rassa in 1886, remaining in that section of Florida for two months, during which time I made excursions among the rookeries of Charlotte Harbor, Estero Bay and a trip up the Caloosahatchee river to the Hicpochee region. The great bird rookery at the entrance of Matlacha had almost disappeared; less than two hundred nests were observed and these were mostly of little blue herons and Louisiana herons. Not a single nest of the great American egret or of the great white heron, and less than half a dozen nests of the snowy heron were seen. The same condition obtained at practically all of the rookeries which I visited in Charlotte Harbor and Estero

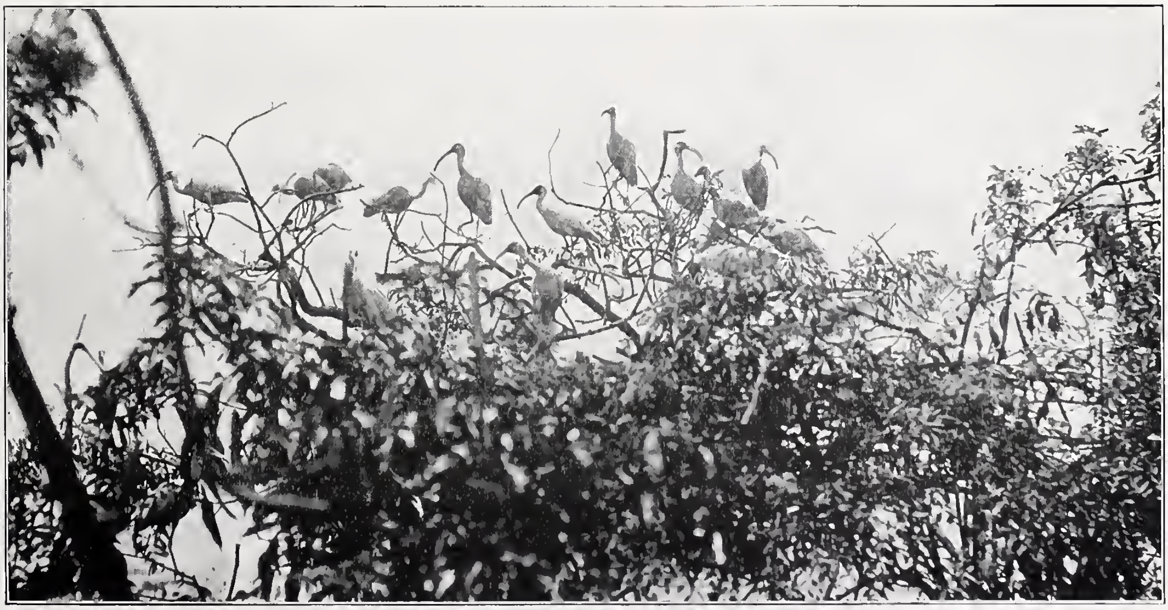
Courtesy Herbert K. Job, State Ornithologist, Connecticut

MAN-O-WAR BIRDS—FLORIDA KEYS

GULLS AND PELICANS IN FLIGHT BEFORE A STORM



ROYAL TERNS NESTING



WHITE IBIS—ROOSTING

Bay. In the six years, from 1880 to 1886, the plume hunter had practically wiped out the white plumed birds along the southwest coast of Florida.

Along that section of the Caloosahatchee, between Fort Thompson and Lake Hicpochee where thousands upon thousands of birds were nesting and feeding in 1879, only a few Ward's herons, Louisiana herons and little blue herons were observed. The roseate spoonbill had disappeared entirely. Less than two dozen specimens of the great American egret and the snowy heron were seen. The tipped ibis still existed in quantities for the reason that they had not been sought for their plumes. Very few purple gallinules were observed. The Carolina parakeet and the ivory-billed woodpecker had disappeared entirely.

CONTRASTS OF TWELVE YEARS

During the month of December, 1912, in company with Dr. T. S. Palmer, assistant chief of the Biological Survey, Department of Agriculture, Washington, District of Columbia, I made a trip from Fort Myers up the Caloosahatchee river, across Lake Okeechobee and down the drainage canal to Fort Lauderdale, for the purpose of observing the remnant of bird life still in that section of Florida. Two months also were spent cruising along the Florida coast from Tampa south Cape Sable, for the purpose of observing wild life conditions.

It was too early in the season to locate any nesting rookeries, but I found a tremendous decrease in bird life throughout every section of Florida that I visited. There were still large numbers of wood ibis and tipped ibis along the Caloosahatchee between Lake Okeechobee and Fort Thompson, as well as a goodly number of teal, Florida dusky and pin-tail ducks, but the plovers and snipe had decreased tremendously, although there were still enough of them to attract attention. In fact, we found that the section between Fort Thompson and Lake Hicpochee was the richest in bird life of any section of Florida visited at that time.

In Lake Hicpochee and in crossing Lake Okeechobee very large flocks of scaup and ring neck ducks were observed and we judged there were half a million fowl of that kind along the route we took. A short time after entering the canal, which extends from Lake Okeechobee to Fort Lauderdale, we came into a section of the Everglades where the Florida dusky duck existed in quantities. Considerable numbers of limpkins and American bitterns were also seen, and possibly two dozen examples of the great American egret. During the entire trip from Fort Thompson to Fort Lauderdale, but two or three snowy herons were seen. As we neared Fort Lauderdale bird life became exceedingly scarce. The great white egret disappeared entirely and only an occasional Ward's heron was seen.

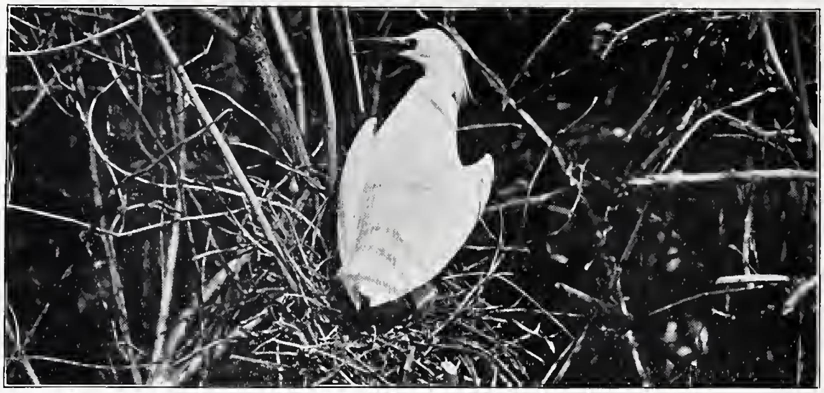
THE FAMINE OF BIRD LIFE

During this trip ninety-six different species of birds of all descriptions were recognized, the larger part of them being observed between Fort Thompson and Lake Hicpochee. On several trips along the coast from Punta Rassa to Cape Sable a number of the old nesting places which existed in such profusion in 1880, were examined. Throughout this entire section the great American egret, the great white heron, the snowy heron, the flamingo and the roseate spoonbill had practically disappeared. At the Pink Curlew bar, a few miles south of Marco, where in 1880 the roseate spoonbill and the flamingo fed by tens of thousands, but five of the latter were observed. Not a single flamingo was seen during the entire trip and but two snowy herons and one great American egret was discovered. While lying at anchor a few miles up the Shark river from the mouth during a storm, a flight of several thousand little blue and Louisiana herons were seen passing from the feeding grounds to the resting places.

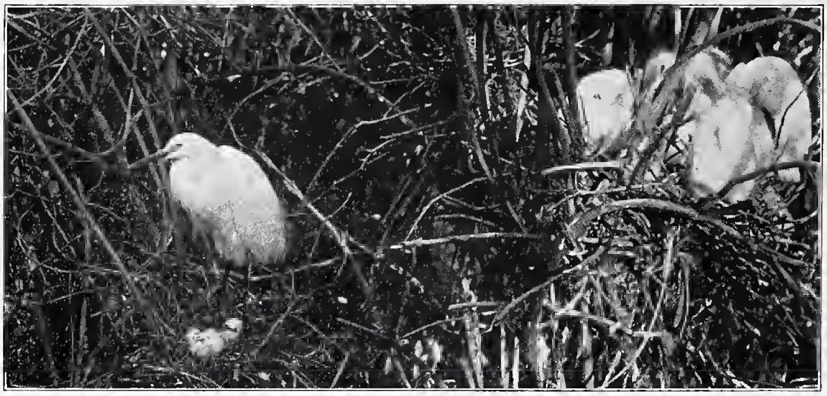
I penetrated the Everglades for a few miles at the upper end of Shark river and saw less than half a dozen herons. We passed through one of the great nesting places of 1880 and no one would have suspected that a heron of any description had ever nested in that vicinity. Less than half a dozen night herons and two or three little blue herons were all that we observed. The bird rookeries along the coast from Punta Rassa to Cape Sable consisted chiefly of small colonies of brown pelicans, cormorants, tipped ibis and little blue and Louisiana herons. Not a single reddish egret was seen.

PROTECTED ROOKERIES

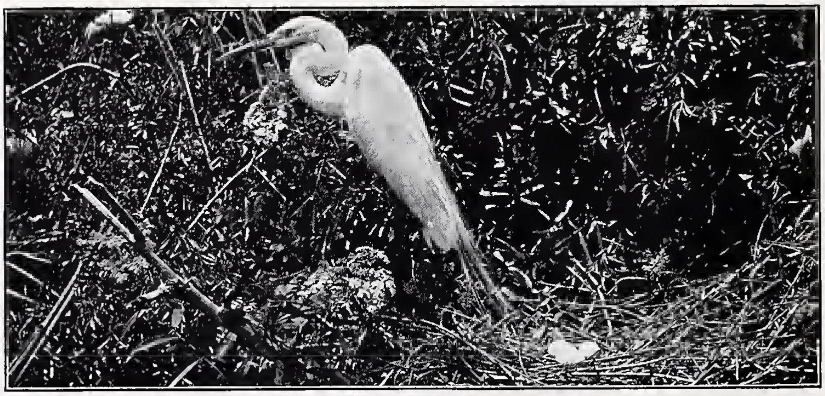
In the northerly end of Charlotte Harbor half a dozen rookeries somewhat widely scattered from each other have been set aside in three national bird reservations and have been protected for a number of years by the United States Department of Agriculture and the National Audubon Society, and here I found that the little blue and the Louisiana herons, the pelican and tipped ibis were gradually in-



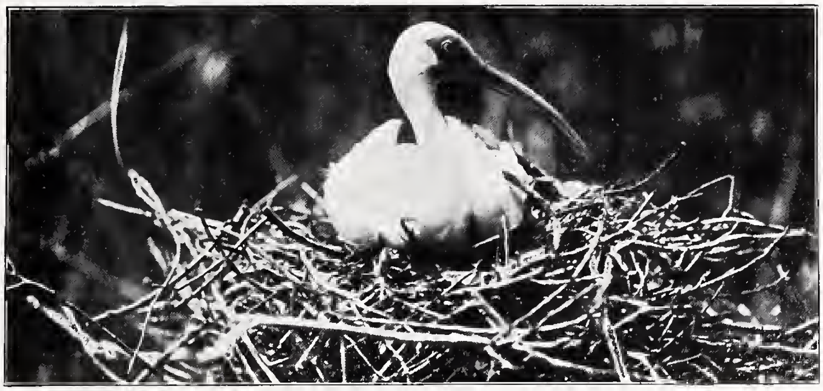
HERON PROTECTING EGGS FROM SUN



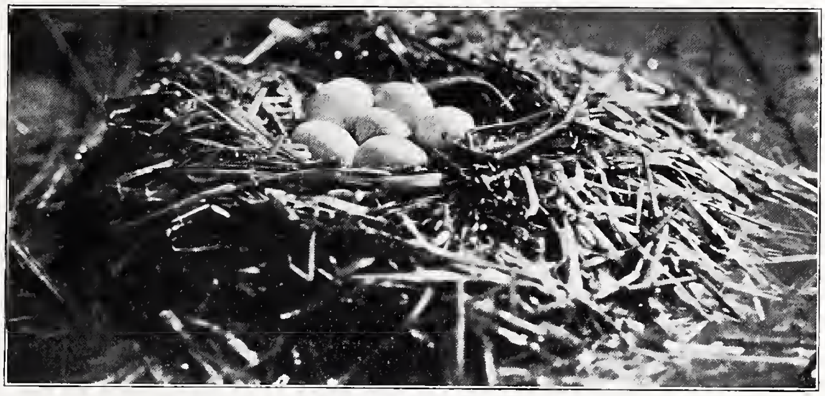
SNOWY AND LITTLE BLUE HERONS



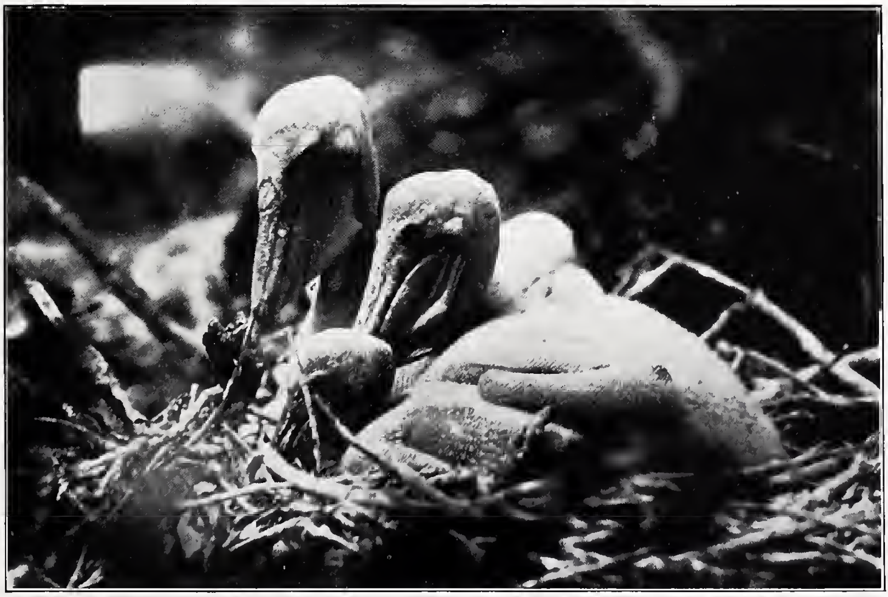
WHITE HERON AND NEST



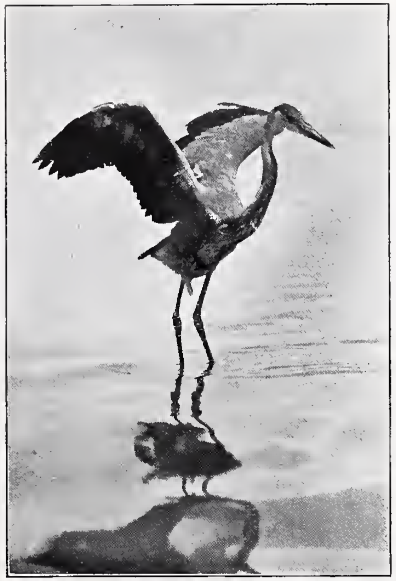
IBIS ON NEST



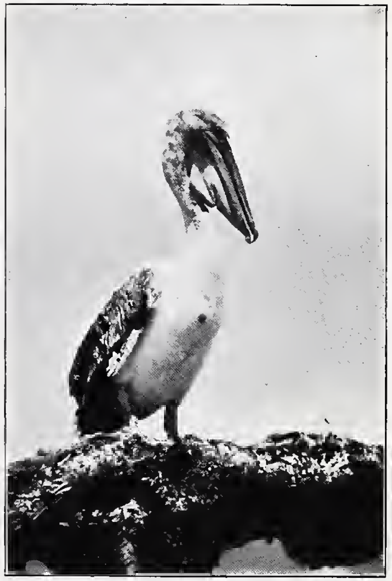
DIEDIPPERS NEST



YOUNG BROWN PELICANS

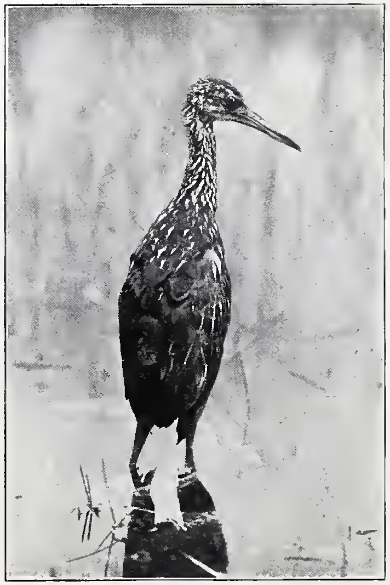


YOUNG WARD'S HERON



Courtesy A. W. Dimock

PELICAN



YOUNG LIMPKIN

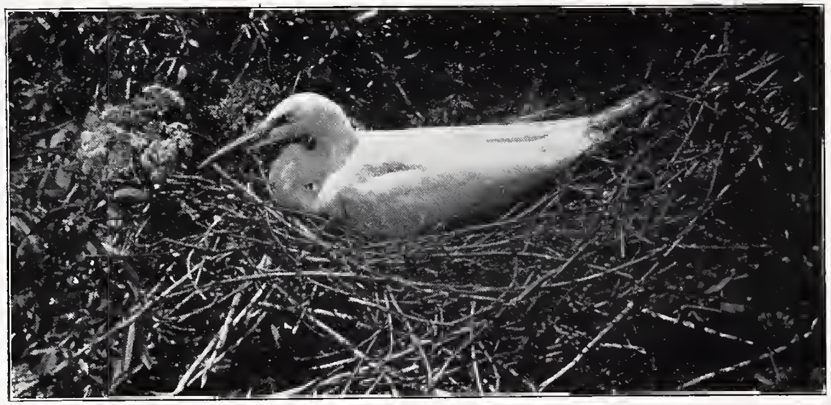
Courtesy A. W. Dimock

YOUNG LOUISIANA HERON

Courtesy Herbert K. Job, State Ornithologist, Connecticut

LOUISIANA HERON INCUBATING

YOUNG EGRETS, ALLIGATOR BAY ROOKERY



GREAT AMERICAN EGRET. GOOD NESTING BIRD

creasing and the wardens reported the snowy heron as again coming back to nest in small numbers. In Tampa Bay two or three rookeries, now national bird reservations, have also been similarly protected for several years and here again we found the pelicans, cormorants, gulls, terns, herons and tipped ibis on the increase. The warden reported that a few snowy herons were coming in and beginning to nest. In both these localities I was informed by the warden that if the birds were protected and not shot out for their plumes, they would gradually return to their nesting places and within a period of ten or fifteen years the snowy heron and great American egret and all the herons and water birds would increase to such an extent as to renew the abundance of these beautiful birds, which existed in that section of Florida in the early 80's.

ALLIGATOR BAY ROOKERY

Encouraged by these results, in conjunction with the National Audubon Society and the citizens of Fort Myers and Marco, a plan was formed to protect the Alligator Bay Rookery, which at the present time is the chief nesting place left in Florida of the remnant of the great American egret and snowy heron. Several wardens were placed to watch the rookery and the feeding grounds, and at the date of this writing, May, 1913, reports indicate that several hundred great American egrets and snowy herons have nested and are rearing their young. If this protection of rookeries during the nesting season can be successfully extended along the coast, Florida's original bird life will be largely restored in the course of ten to fifteen or twenty years, and one of the state's most attractive features to the tourist will be replaced. Such a result would bring an immense increase of northern travel to Florida and redound greatly to the financial gain of the state, as the majority of tourists are money spenders, many of them leaving several hundred dollars behind them.

It is great error to permit the wild life of any state to be destroyed and the gunning tourists will eventually prove to be but a small portion of the visitors to Florida. The amount they spend is small compared with the amount spent by the general traveler. The great income from tourists will be derived from people who do not shoot, who do not kill, but are attracted to Florida by the wealth of its wild life, by the rare and beautiful birds which exist nowhere else in the United States and which will not long exist in Florida unless adequate measures are soon taken to prevent their extermination.

PUBLIC SENTIMENT AS A PROTECTION

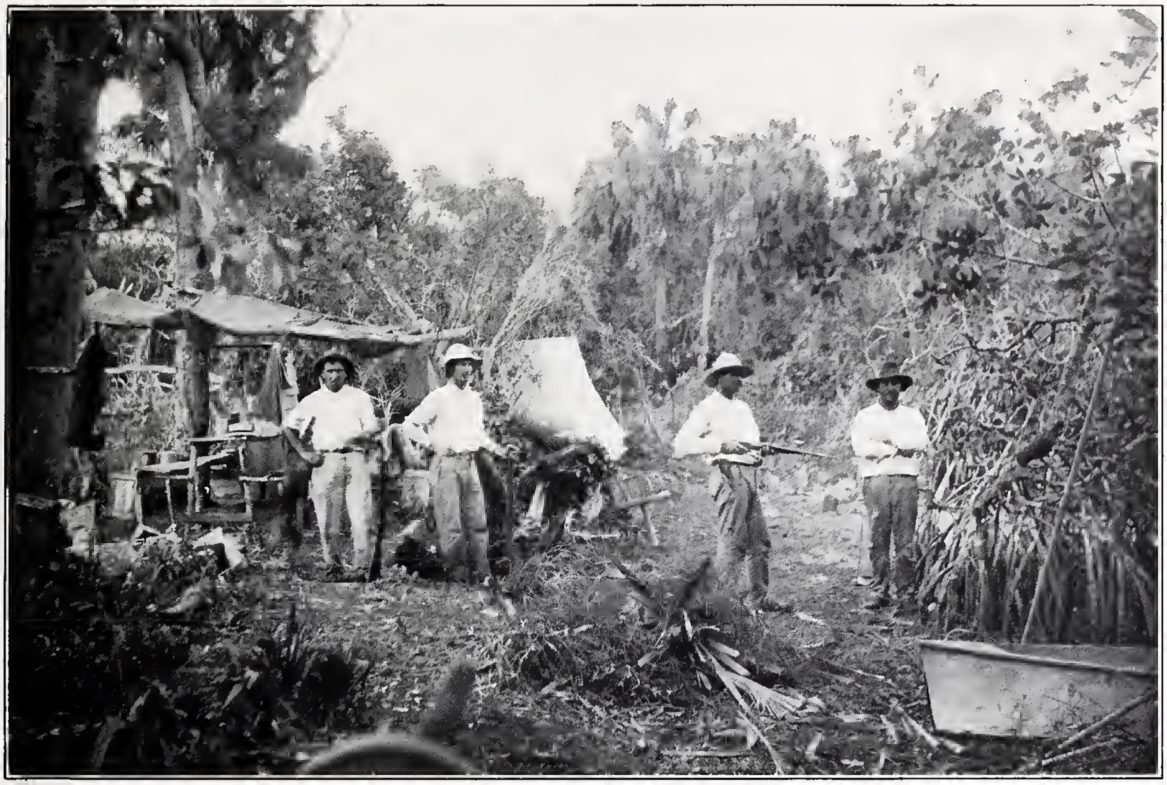
The measures necessary to preserve the bird life of Florida are simple and can be effectively put in force, provided public sentiment is once aroused to demand such preservation. And in order to secure effective action, public sentiment must be aroused against the destruction of the birds and against the use of bird plumage. Women, whose demands for bird plumage for personal adornment bring the birds commercially in great demand, could prove themselves the greatest factor in bird conservation by entering into a voluntary crusade against wearing hats decorated with such plumage.

Laws prohibiting bird destruction are of little use unless backed by the support of a united public sentiment. As the matter now stands, a few plume hunters and dealers in bird skins gather a few thousand dollars annually from the slaughter of egrets and the sale of their plumage. A hundred tourists will spend five times the amount realized from all bird plumes taken and sold, and if the birds are protected and finally restored to anything like their former abundance, these hundreds of tourists will eventually increase to thousands and the citizens of Florida will be benefited by the annual expenditure of hundreds of thousands of dollars, where now but a few thousands are realized from a handful of plume hunters. And what is of quite as much importance, many of these tourists will become infatuated with the magnificent climate, the abundance of wild life, the opportunities for the profitable culture of citrus fruits and of vegetables for northern markets, will invest in winter homes, thus adding their quota to the wealth, the population and the permanent prosperity of the state.

WILD LIFE CONSERVATION

To the citizens of Florida wild life conservation means much, very much more than the sentimental preservation of a few colonies of herons. It means adding to the material prosperity of the state, increasing its population and wealth and assisting to make the state the most attractive section in the entire Union for winter residents.

In order to preserve Florida's bird life and restore it to its original splendor, a number of wild life refuges should be established at various points throughout the state, because such refuges are particularly valuable in preserving all those gregarious species of birds which assemble in great colonies to nest.



WARDEN'S CAMP, ALLIGATOR BAY ROOKERY

ONE OF MANY NESTING ISLANDS, ALLIGATOR BAY ROOKERY

The United States Government has already established more bird refuges in Florida than in any other state in the Union. The principal refuges created by the National Government are located in Tampa Bay, Charlotte Harbor and on the east coast in the vicinity of Indian river. The National Audubon Society also has a refuge on Orange Lake, in Marion county, and on all these reservations the birds are now effectually protected. The inhabitants of the islands separating Charlotte Harbor from the gulf and extending from Gasparilla Pass to San Carlos Pass, are anxious to have these islands converted into a state wild-life refuge and the slaughter of their beautiful birds stopped. Their wishes should be respected.

Another wild-life refuge should be established along both banks of the Caloosahatchee river from Fort Thompson to Lake Hicpochee and around the margins of Lakes Okeechobee and Hicpochee, and the slaughter of wild birds therein prohibited.

LEGISLATION NEEDED

Motor boats using any of the rivers, canals, lagoons or navigable waters of Florida should not be permitted to carry firearms used for the slaughter of birds. The killing of all species of wading birds should be prohibited throughout all of the Mangrove keys on the Gulf coast, as well as on the Atlantic coast of Florida. An extensive wild-life refuge should be established including the islands and mangrove keys from Estero Bay southwards to Cape Sable. Another extensive nesting refuge should be started on the site of the famous bird rookery east of Cape Sable.

The birds which have been destroyed most rapidly are those nesting in great colonies and whose plumage is in greatest demand for millinery purposes. Therefore, in addition to establishing a comprehensive system of bird refuges, it should be unlawful to kill all plumage and insectiverous birds at all times. It should be unlawful to sell the plumage of such birds or to ship such plumage or to send it through the United States mails. It should also be unlawful for any transportation company to carry bird plumage and it should be unlawful for any individual to wear such plumage, and the possession of forbidden bird plumage should be *prima facie* evidence of guilt, insuring conviction and adequate punishment. It should also be unlawful to enter bird rookeries during nesting seasons.

The citizens of Florida can not afford to sit idly by and allow the great natural resource of its magnificent wild birds to be destroyed.

Once exterminated they can never be reproduced. Protected now and allowed to increase naturally they will again people the waste places and valueless mangrove islands and useless sandy beeches. And the vast stretches of sea coast and marsh, oyster reef and sand bar should harbor great flocks of shore birds and waders. Nearly every species of plover and snipe should be found within her borders during some season of the year. The great annual flights of migratory song birds should pass undisturbed to and fro throughout the length of the state during their seasons of movement.

The shallow bays, sounds and inlets should support millions of wild fowl, and among the mangrove islands and sandy beaches bordering the gulf and the Atlantic, the avocet, shear water, oyster catcher and all the species of gulls and terns should breed unmolested and nest undisturbed. The immense flights of pelicans, frigate birds, ospreys, and water fowl should again be restored to her coast.

When this shall have been accomplished Florida will have effected one of the greatest and most valuable feats of conservation possible within her borders, one that will inure to the lasting benefit of all her people and to the permanent prosperity of the state, and she will have performed a duty that she owes to the nation and to the world.

CHAPTER XIII

FLORIDA'S RAILROADS

RAILROADS everywhere have been most efficient developers of the sections through which they have passed. Nowhere has this fact been more marked than in Florida. The lines of rails through the state have been the arteries of agricultural and civic growth, and even today each road is the center line of a strip of varying width wherein industrial activity is marked. The increase of railroad mileage has always been followed by a corresponding increase of population.

Up to the year 1884, 1,045 miles of rails had been laid in Florida. The population at that time was approximately three hundred and twenty thousand, or one mile for each 306 inhabitants, with a density of population of about six persons to each square mile of area. With a density of population in 1913 of fifteen, there is one mile of railroad in operation for each 146 permanent residents.

A great impulse was given railroad construction in Florida under the administration of Gov. William W. Bloxham, from 1880 to 1884. The Legislature of 1881 granted a number of charters and encouraged railroad extension by large grants of land. The most important of these was that given to the Pensacola & Atlantic Railroad, from Pensacola to Chattahoochee, which was accompanied by a land grant of 20,000 acres of land for each mile of road construction. Many of these new roads were short lines, local in importance and extent, and subsequently they were merged into other and longer lines and became links in the roads which today cross the state from east to west and from north to south, or form important parts of interstate trunk lines extending far beyond the boundaries of the state.

These smaller roads, many of them having important rail or water connections at terminal points, traversed the fruit and vegetable growing sections, and their construction was followed by a quick and large development of horticultural exports. More than nine hundred thousand boxes of oranges left the state for northern and outside markets in 1885, and this increasing industry was fostered by improved means of transportation.

EAST COAST DEVELOPMENT

No better illustration of sectional development can be found than that of the Atlantic side of the state by the building of the Florida East Coast Railway system from Jacksonville to Key West. The inception of this line was the purchase of a narrow gauge road that connected South Jacksonville with St. Augustine. It was acquired in 1885 by Henry M. Flagler, who employed it largely as a freight line over which to transport from Jacksonville material for the construction of the Ponce de Leon Hotel, which was opened in 1888. In that year he secured control by purchase of three short lines, which gave connections with Palatka and Daytona. These were changed to standard gauge and the steel bridge was built across the St. Johns river at Jacksonville, in 1890, which gave a permanent terminus in the railroad metropolis of the state.

The possibilities of the lower east coast appealed to Mr. Flagler and he planned the extension of the system southward. The construction of the new rail line was begun in 1892, south from Dayton. It was completed to Rockledge in 1893, to West Palm Beach in 1894 and to Miami in 1896, 366 miles south of Jacksonville, and for several years this was the southern terminus of the road.

The idea of extending the road to some deep-water port at the extreme southern end of the state was a daring one. Cape Sable for a time was considered as a possibility, but the engineers reported unfavorably. Then the line across the Florida Keys was studied carefully, with a terminal point many miles north of Key West, and finally the Island City was seriously contemplated. "Can it be done?" was the question Mr. Flagler asked of the engineers. "It can, but it will cost millions of dollars." "Go to Key West," was the order, and the survey was made and construction was begun south from Homestead, twenty-eight miles south of Miami, to which the road had been extended in 1904. Actual construction was undertaken in April, 1905. Mr. Flagler's train was the first to enter Key West over the completed line from Jacksonville, on January 22, 1912.

REMARKABLE CONSTRUCTION WORK

The construction of the 128 miles from Homestead to Key West was in some respects the most daring undertaking in the history of

JUNGLE ACROSS THE FLORIDA KEYS THROUGH WHICH THE FLORIDA EAST COAST RAILROAD WAS BUILT

railroad building. Many eminent engineers predicted failure, even declaring it impossible. But the seeming impossibilities were conquered, although many millions of money and many lives were the cost. Engineering problems were encountered for whose solution there were no precedents. The work of months and the expenditure of millions of dollars were wiped out by the fierce October storms of 1906, 1909 and 1910.

The line of track was carried across the swamps of The Everglades before the mainland of Florida was left behind. It was built through the jungles of the keys and the waters between were spanned by miles of concrete arches. The longest of these is Knight's Key bridge, seven miles from end to end. Long Key bridge is two and three-quarters miles in length, and the "open truss" work of the Bahia Honda bridge lacks but little of a full mile.

The cost of this extension, including the line from Miami to Key West, 156 miles, had been $20,000,000 when the road was opened to its southern terminus. A large amount has been added since that time in replacing temporary work with permanent construction. When the concrete wharves at Key West, where the tracks of the road run alongside ocean-going ships lying in forty feet of water, shall be completed, the entire cost will probably be nothing short of thirty million dollars.

Already the announcement has been made of the awarding of contracts for the building of two immense ferry boats, which will transfer solid trains of freight across the ninety miles of the Florida straits to Havana. These ferries will be used also for the transfer of passenger cars and trains, and the distance to Cuba's most important gateway is to be covered in six hours. The cost of installing these ferries will add at least two million dollars to what has already been expended in the extension and equipment of the road to Key West.

Mr. Flagler lived to see his dream come true of a road across the seas to the Island City, the southernmost city in the United States, the gateway to Cuba, the West Indies and Caribbean ports, and the port in this country nearest of all to Colon, the entry to the Panama canal. Mr. Flagler died in May, 1913, in his eighty-fourth year. At the time of his death his investments in Florida had been at least fifty million dollars, and through all time to come he will be known as the greatest single developer of the Peninsular State.

OTHER FLORIDA RAILROADS

Several great interstate trunk lines enter Florida, which have much greater mileage outside the state than within its limits. The principal of these are the Atlantic Coast Line, the Seaboard Air Line, the Louisville & Nashville and the Georgia Southern & Florida Railway. The Florida East Coast Railway is the most important road wholly within the state, having a mileage on June 30, 1912, the date of the last published report of the Florida Railroad Commission, of 753 miles, to which nearly one hundred miles of new line have been added since that date.

Quoting further from this report—the total railroad mileage in Florida was 5,423.24, of which 3,596.27 were main line trackage; 783 miles of yard track and sidings, and 878 miles of branches and spur tracks.

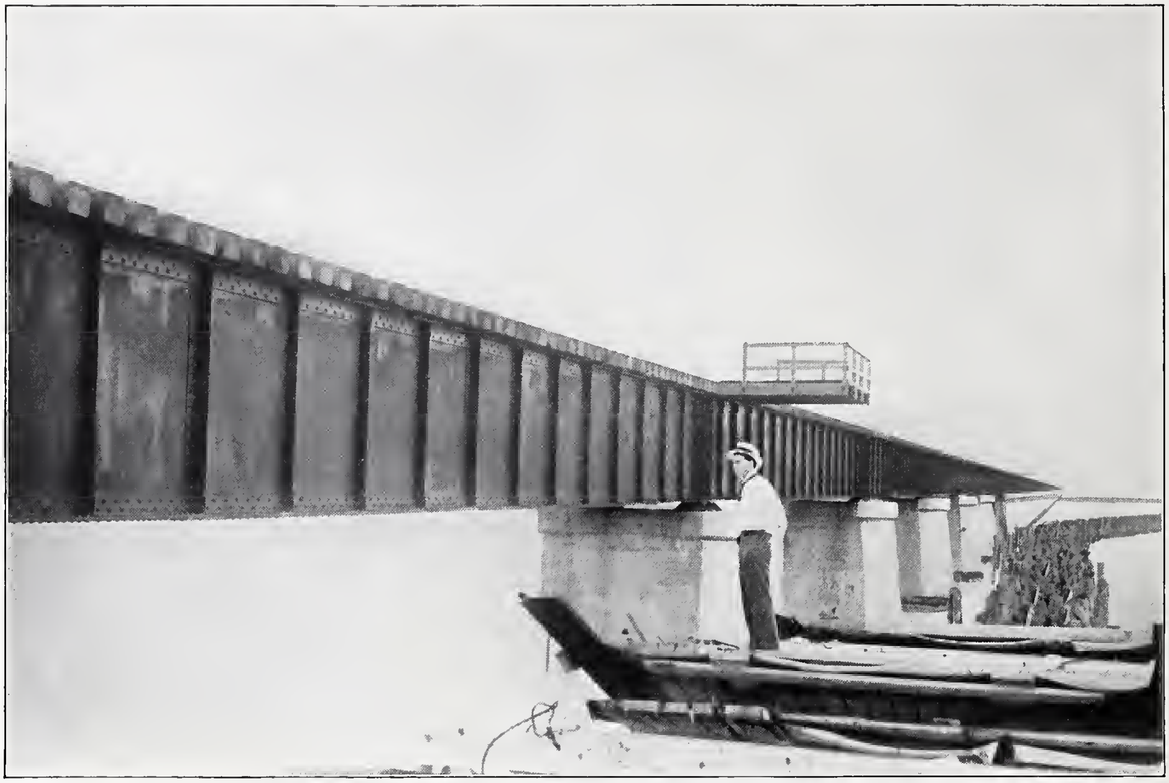
The mileage of railroads in Florida and having terminals in the state was 14,337 miles. The expenditure within the state for new lines, extensions, additions and betterments, from July 1, 1907, to June 30, 1912—five years—was more than sixty million dollars.

The total value of the capital stock, at par, of railroads wholly within the state or having terminals in Florida, was $209,967,300; that of railroads wholly within the state was $28,057,600.

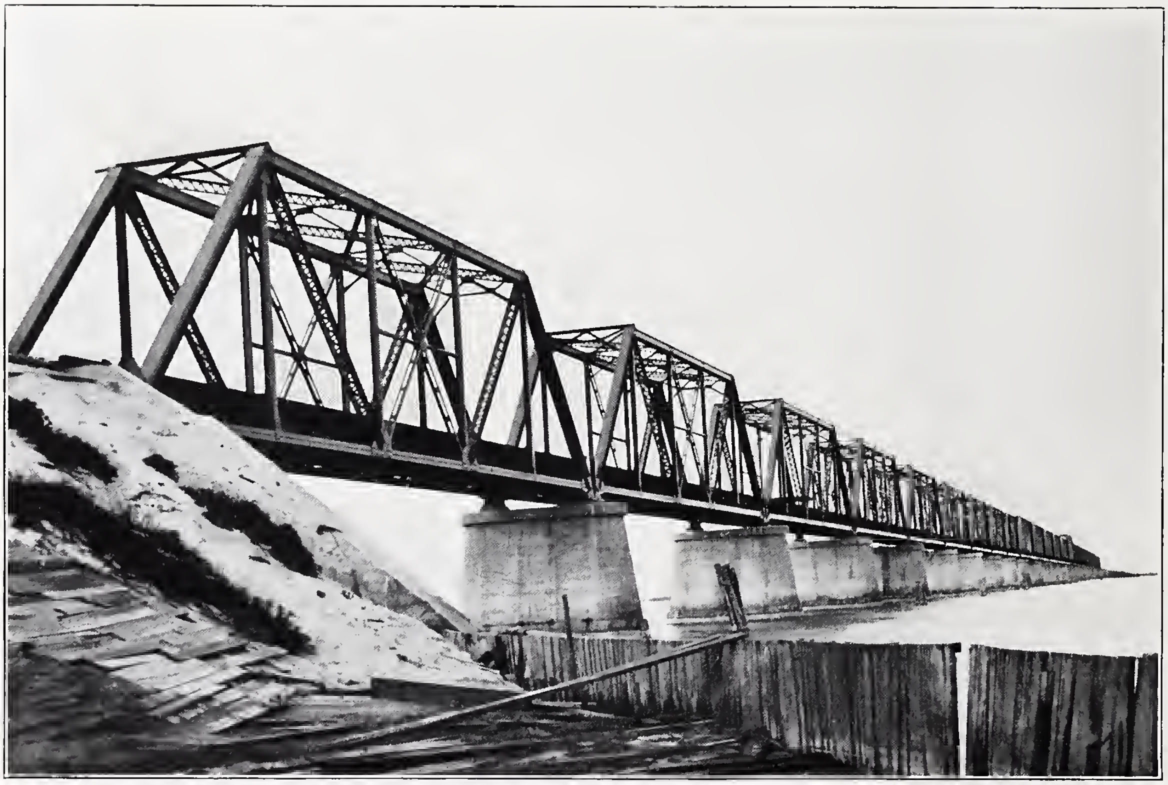
For the fiscal year 1912, the total revenue from the operation of railroads in Florida, was $22,653,847, of which $13,109,432 was from freight traffic, and $6,828,054 from passenger service.

A PERIOD OF EXPANSION

Largely increased activity in railroad extension, betterment and equipment in Florida has come within the years beginning with 1907. This has been due in no small measure to the development of Florida's resources of agriculture, phosphate mining, naval stores and timber, and perhaps even more in anticipation of the opening of the Panama canal. Immense sums have been expended in the construction of terminal facilities at seaport cities, particularly at Jacksonville, Pensacola and Tampa. Transportation and traffic managers were among the first to realize the fact that Florida's ports, both on the Atlantic and the gulf, were nearer to Colon than those of any other state, and that in this respect they possessed an enormous advantage in the future development of commercial relations with South America. That the completion of the canal is to revolutionize traffic relations



KNIGHT'S KEY BRIDGE, SEVEN MILES ACROSS DEEP WATERS



A MILE OF " THROUGH TRUSS " CONSTRUCTION AT BAHIA HONDA

LONG KEY BRIDGE—NEARLY THREE MILES LONG

between the United States and the southern hemisphere they foresaw and laid their plans accordingly.

PECULIAR TRAFFIC CONDITIONS

Railroad traffic in Florida is governed by some conditions that are unique and peculiar to this section. One of these is the fact that the rail lines and, to some extent, the water routes are called upon to handle immense passenger business in the winters, which is lacking in the warmer months of the year. As Florida's winter climate has come to be appreciated by the rest of the world, the cold of the northern winters has sent increasing thousands hurrying southward to enjoy the balmy breezes or to regain broken health in favoring surroundings. To every section of the state they come for a fortnight, a month or six months. Thus the winter season increases Florida's population by a quarter of a million visitors, and the railroads are called upon to transport these hundreds of thousands into the state and back to their northern homes, and practically ninety-five per cent of this traffic comes between December first and the middle of the following April.

These same months are the harvest time of Florida's most important crops, her oranges and vegetables. The orange crop for the year 1912-13 amounted to more than twenty-seven thousand carloads, allowing 300 boxes to each car. Florida's vegetables for the same year would have filled 19,000 cars, and these products are ready for the northern markets just when the tourist travel is heaviest. This is a condition that affects a majority of the rail lines in the state, for a majority of the roads have a large traffic in fruits and vegetables, and tourists go wherever the railroads can carry them. These peculiar conditions often tax the equipment capacity particularly of the Florida East Coast Railway, of the Seaboard Air Line and of the Atlantic Coast Line.

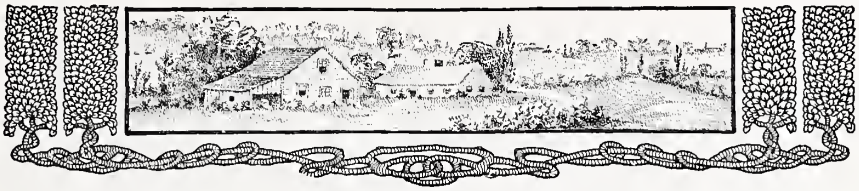
FLORIDA'S RAILROAD COMMISSION

Florida's railroad interests are supervised by a Railway Commission, which consists of three commissioners and a secretary. The duties of these commissioners are those usually intrusted to similar bodies in other states, and they are vested with executive power in making orders relative to rates and other matters in which the desires of the people and the rights of the transportation companies, express companies, telephone and telegraph companies and other managers of public utilities, sometimes come into conflict. The commission is backed with the authority of the state to enforce its orders and the railroad and other corporations have the right of appeal to the courts from the decisions of the commission.

To her transportation companies operating within her boundaries Florida owes her prosperity more than to any other agency or cause, unless it be to the resources that have been given her by Nature, and whose development has brought growing strength and importance to these corporations. The Peninsular State offers an enticing and promising field for the building and operation of railroads and when her resources of agriculture, of timber and of mining shall have reached even a half of their possible development, the railroad mileage will have been increased to at least ten times what is now being operated.

CHAPTER XIV

FLORIDA PHOSPHATES



ALTHOUGH Florida is not ranked high as a mineral-producing section, its mines are the source of more than one-half of the phosphate rocks and fullers' earth used in the world's commerce and manufactures. It leads also as the productive source of the world's naval stores, turpentine and rosin. The foreign and domestic consumption of these commodities brings into the state millions of dollars each year, and the aggregate is being increased yearly as these resources are developed by larger investments of capital and by a continually enlarging demand.

The world's most extensive deposits of phosphate rock have been discovered in the United States. The North Carolina mines were first operated in 1867. These were found paralleling the Atlantic coast line and not far distant from it. The phosphates of Florida lie principally in a narrow curved belt reaching from west of the Apalachicola river southeast and south to the Gulf of Mexico in Manatee and Lee counties, a distance of three hundred and fifty miles. The pebble phosphates occur in the southern part of this area. The principal deposits of hard rock phosphate are found in the central part of the area, in Columbia, Alachua, Marion and Citrus counties. Suwanee and Hernando counties also have extensive operations. The existence of these deposits was known for some years before the product became important as an article of trade, in 1888.

The central Tennessee mines were discovered and their value was recognized almost twenty years later, and at a still more recent date, deposits were uncovered in an area included in southeastern Idaho, southwestern Wyoming and northeastern Utah. These deposits are believed to be the most extensive in the world. The quality of the product, the extent of the included area and the content value in the essential chemical ingredients have not yet been determined, and the development has not been carried to a large output.

Deposits of phosphate rock are known in Arkansas, southern

Georgia, North Carolina, Alabama and Mississippi, but these have not been developed commercially because of the low chemical values and also because, as far as they have yet been discovered, these deposits are not sufficiently extensive to warrant the investment of large capital.

PHOSPHATES IN AGRICULTURE

The uses of phosphate rock in industrial development is best stated in a recent article by Prof. S. E. Collison, of the Florida Agricultural Experiment Station. He wrote: "Phosphorus is the element most quickly exhausted from common cultivated soils of the United States. It has been estimated that the soils of the middle states, where cereal grains are largely produced, have in a period of fifty-five years, lost one-third of their content of phosphorus through its removal in these crops. To keep up the present crop production resort must be had to applications of phosphoric acid in the form of commercial fertilizers, such as bone, slag and rock."

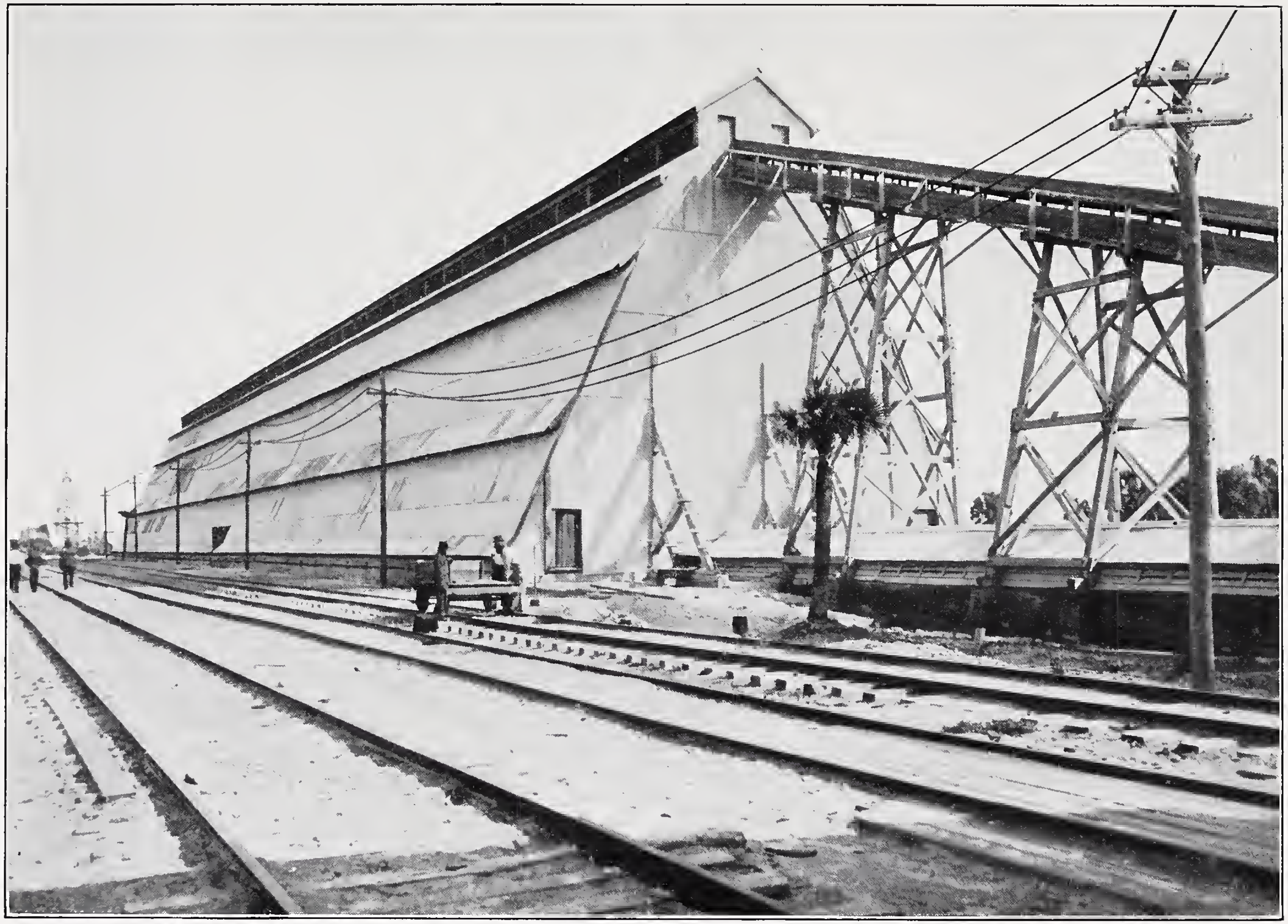
Of these three bases, rock is the most important and the easiest available, and it is from this fact that the phosphate rocks gain their large value.

VARIETIES OF FLORIDA'S PHOSPHATES

The phosphates of Florida, which because of their chemical analysis and their small percentages of mineral impurities, are considered the best in the world, occur in four principal forms. They are known as hard rock phosphate, soft phosphate, river pebble phosphate and land pebble phosphate. The pebble phosphates differ but little, the distinction being their occurrence in various locations indicated by their respective titles, either in the beds of streams or on higher lands. No soft phosphate has been produced in Florida for a number of years, therefore, the general classification is into two divisions, hard rock and pebble phosphates.

GEOLOGICAL OCCURRENCE

From the viewpoint of the geologist the occurrence of phosphates in Florida presents a number of problems that are yet to be decided by scientific investigation. It is known that these minerals are found in the formations of several geological periods and that the deposits have been subjected since their formation to varying conditions. Phos-



PHOSPHATE STORAGE AND SHIPPING PLANT AT BOCA GRANDE

phorus in solution in water may replace the carbonate of the limestone, forming calcium phosphate. This replacement process has been clearly an agent in the formation of rock phosphate. Shells have been found in which the original calcium carbonate has been changed to phosphate, proving the possibility of the formation of the mineral in this way. Phosphoric acid in sufficient quantities to form large deposits of phosphate may have been supplied from any of several sources.

The occurrence of hard rock phosphate is in connection with a mixture of widely diverse materials. The formation is largely of light gray sands in which occur also clays, phosphate rocks, flint boulders, limestone, vertebrate and invertebrate fossils. Of this conglomeration merchantable phosphate rock forms from ten to twenty per cent. Its occurrence in the mass is irregular, sometimes near the surface, sometimes so far beneath it as to prevent economical mining.

Phosphate rock in Florida lies near the surface and the process of mining it does not necessitate deep underground operations. This is not intended to suggest that the rock may not be found in deposits far below the surface, but the deposits that have been developed are covered by an overburden of sand and clay usually from five to fifteen feet thick. This must be removed by dredge, steam shovel or hydraulic methods before the rock may be economically taken from the deposit.

The phosphate-bearing stratum is exceedingly variable in thickness. In the northern part of the phosphate area its occurrence is in layers usually thinner than further south. In Suwanee, Columbia, Alachua and northern Marion counties, it sometimes reaches a thickness of thirty to fifty feet. Further south, in Marion and Citrus counties, its maximum thickness is found, from sixty to seventy feet, and along the Withlacoochee river, a thickness of seventy-five feet has been shown by boring tests.

PEBBLE PHOSPHATE

Pebble phosphate differs from the rock variety in its occurrence as pebbles from the size of a generally spherical body half an inch in diameter to the size of a walnut. This variation makes necessary different methods of mining from those employed in handling rock phosphates. The pebble variety is found under an overburden of sand, clay or marl or a mixture with other materials, from four to ten feet thick, and the formation in which it is found varies in thickness from eight to twelve feet, sometimes as much as twenty feet. It is from ten to twenty-five percent of the formation in which it occurs.

The occurrence and peculiarities of pebble phosphate deposits indicate geological conditions during the formation of the beds where it is found, differing much from those attending the hard rock deposits. There is evidence that the former were made under water or under conditions that induced marked stratification.

METHODS OF MINING

The methods of mining phosphates vary with differing local conditions. After the removal of the overburden, the layer of soil that covers the deposits, blasting is sometimes necessary to loosen the masses of hard rock phosphate, which are then handled by dredges or other means to the conveyances which carry them to the washers. Dredges are employed where the deposits are covered with water, and this usually accumulates in the pits as the excavations become deeper. Hydraulic mining methods are used largely in taking out pebble phosphates, streams of water under enormous pressure being directed against the deposits.

WASHING

The material as it comes from the mines contains large quantities of sand, clay and other undesirable detritus, which must be separated from the valuable phosphates, which as rock or pebble, are insoluble in water. Therefore, water is used in the process of separation. And washing is an essential part of the process by which the mineral is prepared for market. The washeries in some of the Florida phosphate plants, are immense structures, resembling from a distance the great grain elevators in wheat-producing sections of the country. Large expense is necessary for their construction and equipment.

Not less important is the drying of the cleansed phosphates. This is essential, for unless the content of moisture is below a certain percentage the product is unsalable or the price is discounted by large proportions.

MARKETABLE QUALITIES

The marketable value of phosphates, so far as it is not affected by trade conditions, depends upon two principal things. The first is the percentage of available tri-calcium phosphate or as it is known to the trade, the bone phosphate of lime, the element which in the acid chamber becomes the base in the formation of the phosphoric acid of commerce. The second is the low content of the impurities, iron and alumina. More than three percent of these impurities, are not acceptable in commercial phosphates, because in the acid chamber, the sulphuric acid reacts first upon the iron and alumina which reduces its efficiency in the reaction upon the tri-calcium compound by which the phosphoric acid is formed.

Hard rock phosphate is sold upon a guaranteed content of not less than sixty-eight percent of tri-calcium phosphate. A rebate from the agreed price may be demanded if the percentage falls below the required sixty-eight, and no premium is allowed if it goes above this figure. The variation is from this minimum as high as seventy-eight percent. The guaranteed percentage in pebble phosphate is sixty-eight to seventy.

FLORIDA'S PRODUCTION

The extent and value of the phosphate mining industry in Florida is indicated by the reports covering the operations of the year 1912, the latest that have been compiled by the State Geologist. These reports show an increase over the results of the previous year and conditions promise corresponding growth for many years to come. In tabular form the product of the United States, and Florida's share appear as follows:

Location.	Product (Long Tons).	Percentage.	Value.
Florida	2,406,899	81.	$9,461,297
Tennessee	423,331	14.2	1,640,476
South Carolina	131,490	4.4	524,760
All other sections	11,612	.4	49,241
United States	2,973,332	100.	$11,675,774

From this statement it appears that Florida produced more than four-fifths of the phosphate output of the United States. The product of the world's phosphate mines for the same year was approximately three million, eight hundred thousand tons, of which the United States produced seventy-eight percent, and Florida sixty-three percent.

The output of Florida's phosphate mining operations for 1912, were of hard rock, 536,379 long tons, and of pebble phosphate, 2,043,486 tons.

The average price of hard rock phosphate at the mines was reported to be about six dollars a ton; that for pebble phosphate, from two dollars and seventy-five cents to four dollars and fifty cents, according to the grade.

The consumption of Florida-produced phosphates is largely by foreign manufacturers, but the domestic use, both in Florida and elsewhere in the United States, shows decided increases from year to year. The shipments to foreign markets of hard rock in 1912 were 473,639 tons; of pebble phosphate, 682,232 tons. The shipments to points in the United States were, of hard rock, 15,425 tons and of pebble phosphate, 1,204,502 tons. Florida manufacturers consumed 10,499 tons of hard rock and 32,425 tons of pebble phosphate.

The entire product of Florida mines, from the beginning of their operation, in 1888, to the close of 1912, was nearly twenty-three and one-half million tons.

About forty companies and firms are engaged in the operation of phosphate mines in the state. They have many millions of capital invested in lands, machinery and railroads. The industry has added greatly to the wealth of the state and it is drawing additional capital from other sections to aid in its further development. It is believed to be still in its early infancy and the future holds promise of vastly greater returns than have yet been earned as the reward of enterprise and energy.

CHAPTER XV

MINERAL DEPOSITS OF FLORIDA

THE geological history and formation of Florida are particularly favorable to valuable mineral deposits. Some of these have been developed, as the phosphates, which are described elsewhere; peat, and the varieties of clay, varying from the highest grades of kaolin and fullers' earth, to plastic potter's clays and other varieties adaptable to a large number of uses. These clays in their analyses and formations grade into each other so closely that often a distinct classification is impossible.

In its deposits of peat, Florida is probably richer than any other equal area in the United States, if not in the world. The geological formation of Florida is particularly favorable to the formation of peat, which by geologists is declared to be a preliminary stage in the creation of different grades and varieties of coal. Peat is formed by the decaying of vegetation under water which is clear and not muddy. Such deposits through the ages, under the pressure of the overlying burden of earth and by the internal heat of the earth, are transformed into coal. From this it would appear that the peat deposits of Florida in ages to come, if left undisturbed, would make this state one of the great coal producing sections of this country.

GEOLOGICAL CONDITIONS

Conditions in Florida are almost ideal for the formation of peat. The topography of the state is decidedly immature geologically, as there are very few evidences of recent erosion, especially in the peninsular part of Florida. There are many times more lakes in this state than in all other coastal plain states combined; most of these lakes seem to have been formed by the solution of the underlying limestone (never by the damming up of streams by drift) and have no streams carrying sediment into them. The soil being mostly sand, very little rain runs off as it falls, most of it soaking into the ground immediately to reappear gradually in the swamps of the low lands. For this reason the streams which arise within this state fluctuate but little and consequently are bordered by peat deposits in many places. The rainfall is ample and so distributed through the seasons that most of it falls during the warmest months, thus balancing evaporation to a large extent.

Florida undoubtedly has a greater variety than any other section of swamps, bogs, marshes and other places where peat accumulates, but the resulting deposits of peat are of such large variety as almost to defy classification. The surface waters may be divided into four classes, namely—sandy, muddy, calcareous and swamp. The swamp water in which occur the most important peat deposits, may be further classified as flowing and stagnant, the latter varying in its fluctuations of depth and in the amount of vegetation growing in it, and here are the largest and richest peat deposits in the state.

EXTENT OF THE PEAT DEPOSITS

The occurrence of these deposits has been determined more or less accurately, but much investigation remains to decide even approximately, their extent.

In the western end of the state a considerable area has been defined, which includes large sections of the counties from Santa Rosa east to Liberty. Another area extends eastward across the state, which includes large portions of Taylor, Madison, Hamilton, Suwanee, Baker and Bradford counties. Perhaps the most extensive area reaches from Duval through Marion, Putnam, Orange and other counties well down toward Lake Okeechobee, embracing large sections of the St. Johns and Kissimmee River valleys. An indefinite and probably less valuable deposit includes Lake Okeechobee and extends almost to the southern end of the peninsula.

There are immense peat fields to be found in Alachua, Levy, Pasco, Hernando and Hillsborough counties. Owing to the uncertain limits of these deposits and the determination yet to be made of their commercial value, it is impossible to estimate the combined area of Florida's peat deposit: but it is probably an entirely safe assertion that one-third of the area of this state is underlaid by this fuel.

Peat has entered but little into commercial uses in the United States as compared with older countries of Europe. In the more or less distant future, when the conservation of coal in this country may become a matter of moment, it is likely that this resource in Florida will have far greater consideration than now.

FULLERS' EARTH

Fullers' earth is not widely known or used in the arts, but it is nevertheless a valuable article of commerce and its uses, although restricted, are important. It is a form of clay varying considerably in its percentages of chemical content according to the localities in which it occurs. Formerly it was used almost exclusively by fullers in removing grease from cloth, and from this it gained its name. The principal uses now are for clarifying oils, particularly lubricating oils. Its occurrence in the United States was first discovered at Quincy, Gadsden county, Florida. Previously all that had been used in the United States was imported from England. Seven states reported the production of fullers' earth in 1907. In the order of their product, they were Florida, Arkansas, Georgia, South Carolina, Massachusetts, Colorado and Texas, and of the total output, Florida produced about twenty-five percent.

The Florida product, it is claimed, is equal to the highest grades known in the world. In color it varies from light buff, through the browns into gray and blue. Its occurrence in Florida is usually in strata varying from two or three to fourteen feet, and in some deposits a depth of one hundred and thirty feet has been penetrated without reaching the bottom.

METHODS OF PRODUCTION

The deposits which have been worked in this state lie near the surface under an overburden of from two or three to fourteen feet. This overburden formerly was removed by pick and shovel, but as the industry increased in importance steam operated dredges have been used. The product from the mines is passed through a crusher, which reduces it to pieces three to six inches in diameter, which are then put into driers and the surface moisture is removed under a moderate heat. When dried the product is ground fine, separated according to its grades, and then passed through bolters of thirty to sixty meshes to the inch. It is then ready for shipment.

The first statistical reports of Florida's product of fullers' earth were made in 1908, when the output was about thirty-three thousand short tons, most of which was used in the United States, about five percent being exported. The principal deposits that have been worked commercially or that have been so far discovered, lie in Gadsden, Liberty, Leon, Columbia, Alachua, Marion and Manatee counties.

The total amount of workable fullers' earth in Gadsden county, which is the source of the most important production, is difficult to estimate. In the average thickness of stratum found in that section, it is assumed to yield a minimum of five thousand tons to the acre. While fullers' earth actually underlies the greater part of the county, the workable area under present conditions is restricted to the lands lying near the streams where the overburden does not exceed fifteen feet in thickness. It is estimated that three thousand, five hundred acres of land in this county covers these deposits. This area, with the average of five thousand tons to the acre will supply more than seventeen million tons, or enough to supply the world's demand at the present rate of consumption, for five hundred years.

INEXHAUSTIBLE NATURAL DEPOSITS

The value of Florida's annual product of fullers' earth, by the latest available reports, even in the present but little developed stage of the industry, is something more than three hundred and fifty thousand dollars a year. From the localities in which it is known to occur, it is probable that these deposits extend under a large section of the state, reaching as far west as the Apalachicola river and south into Manatee county. An estimate of the total workable deposits in the state is impossible at the present time. The area in Gadsden county alone has been described, and other sections of the state in which this valuable mineral occurs have not yet been examined by the State Department of Geology sufficiently to determine their extent and value. It is believed that Florida has the most extensive deposits in the world which may be depended upon to supply the world's demands, even if no other territory should be developed for hundreds of years to come.

KAOLIN

Plastic kaolin or ball clay, is among the important products of the state. It burns white; it is found under an overburden of a few feet of sand, and its principal occurrence is in the central peninsular part of the state from Putnam to Polk counties. This industry has been developed to only a small fraction of its possibilities, but enough has been done to indicate that its possibilities in the future are almost beyond present comprehension.

The simplicity and ease of its removal from the deposits in which it occurs in Florida reduce the cost of production to a minimum. Taken from the pit it is placed under high compression to remove the water. It is then dried and is ready for shipment. No manufacturing into pottery or chinaware from this product has been undertaken in the state, so far as is known, but specimens of the clay have been used in other sections with the result of producing the highest grades of pottery and china. It seems that with the probably very large deposits of this high grade clay in Florida, the industry with sufficient capital under the control of experts, will add greatly to the fame of the state. The output of the kaolin industry in Florida was about two hundred thousand tons, with a value of $98,000 in 1907, which was the first year in which accurate records were available. These figures have more than doubled to the present time.

OTHER MINERAL DEPOSITS

With the variety of soils and mineral earths which exist in Florida, it is not surprising that a large number of other earth products should be worth exploiting commercially. In its variety of clays, that which is adapted to brick-making is found in nearly every part of the state. Although the manufacture of clay bricks has not yet become a feature of Florida's industrial development, the conditions exist that will make it a source of large income to the state.

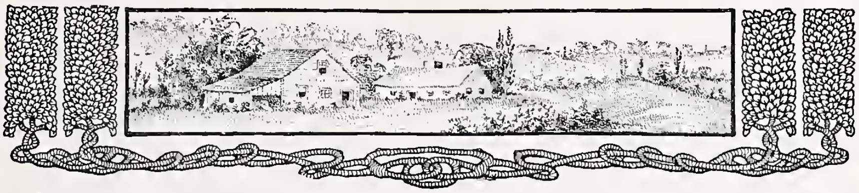
A sand-lime brick is being manufactured in several sections of Florida, and the existence of the raw materials in many sections make this industry one of the important possibilities of the future.

Portland cement has not been listed among Florida's manufactured products, yet the clays and limestone available for this manufacture occur in large deposits in hundreds of localities in the northern half or two-thirds of the state. A mass of native sulphur weighing more than two tons, was discovered in Marion county, seventy feet below the surface. It was found to be unusually pure, and indications were that it was not a freak occurrence. It is not only possible, but probable, in the opinion of geologists, that extensive deposits may be discovered in sufficient quantities and in such occurrence as to be commercially available and valuable.

Not unimportant are the mineral waters that come to the surface in numerous localities and inexhaustible quantities. The analyses of these waters vary in their chemical content. Several natural springs have been utilized for health resort and health restoring purposes. The waters have extended local use in different parts of the state, but the industry has not been developed to include large export trade. That there is an important future in this direction, with proper financial development and advertising, admits of no question.

CHAPTER XVI

NAVAL STORES



FLORIDA owes its pre-eminence in a number of directions to its natural resources, bestowed by the favor of a kind Providence. It claims for itself the credit of developing these resources, of ministering to the necessities of the world, and of increasing its own wealth by enterprise and foresight. In a number of its products it is the largest single source of supply in the world. With its developed resources and undeveloped possibilities, it is probable that Florida could maintain, better than any other section in the United States, perhaps in the world, an economic existence independent of every product that comes to its citizens from sources outside of its own boundaries.

The growth of the naval stores industry in Florida has been largely since 1895. As the pine forests of the Carolinas and northern Georgia were depleted, attention was inevitably directed to the immense tree deposits of Florida. Extensive tracts were acquired by the naval stores interests, who vied with the lumbermen in the size of their purchases and leases. Without question, these two interests today control the most extensive holdings of land in Florida, with the turpentine people in the lead. The exhaustion of the pine tracts in other states has emphasized the importance of conserving those in the Peninsular State, and it is in Florida that the greatest aggregate of capital is interested in the development of this industry.

In its product of naval stores—rosin and spirits of turpentine—Florida leads the world, both in the amount and the value of this output. The principal sources are in the pine forests of Florida, Georgia, Alabama, Louisiana, Mississippi and Texas, with some remaining forests in the Carolinas. From these come ninety to ninety-five percent of the world's annual consumption. Spain and France produce all but a negligible fraction of the remainder.

IMPORTANCE OF THE INDUSTRY

As in other great lines of commerce, the compilation of annual totals is slow and the publication of Government reports is frequently delayed for many months. Heretofore, a single organization has had compiled all authentic statistics of the production of these commodities, and this company, for reasons of its own, has not made public the figures. The large control of the trade has recently passed into other hands and reports of the industry will be given necessary publicity. There is a rather wide and varying difference between the amount of naval stores produced and the amount shipped. The export is determined by the records of various ports through which naval stores are shipped to foreign or domestic consumers. The amount of production is to be determined only from an accurate knowledge of the number of barrels held in storage by producers or factors, on account of low prices or for other reasons.

The production, according to U. S. Government reports for 1910, is taken for illustration, as it is the most recent official authentic compilation, and because by the best information, the annual output has varied but little from the figures given since that report was compiled.

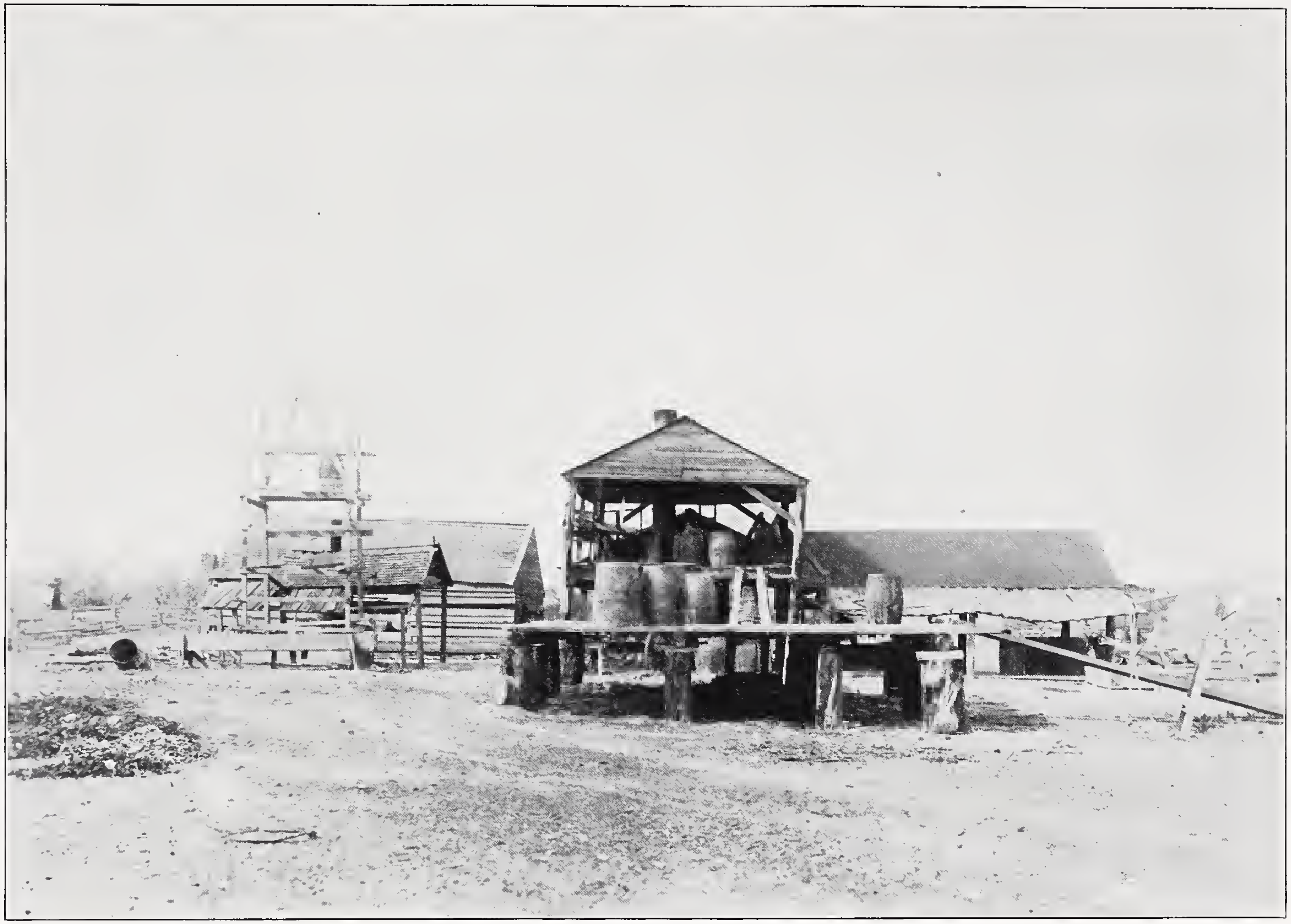
This report shows the production of spirits of turpentine in casks of fifty gallons each:

Alabama	47,000
Florida	298,000
Georgia	139,000
Louisiana and Texas	19,000
Mississippi	35,000
North and South Carolina	17,000
Total	555,000

The value of this product, at prevailing market prices, was approximately $17,680,000.

By the same authority, the production of rosin in barrels of 280 pounds each, was as follows:

Alabama	310,000
Florida	1,818,000
Georgia	870,000
Louisiana and Texas	82,000
Mississippi	212,000
North and South Carolina	112,000
Total	3,404,000



FLORIDA TURPENTINE STILL

The value of this product was $18,255,000, making the total value of the naval stores crop for the year $35,935,000.

Florida's proportion of this product, both of turpentine and rosin, was approximately fifty-four percent, and its value was $9,547,200 for turpentine and $9,857,000 for rosin.

The producing territory of Florida is divided into two portions, separated by the Apalachicola river. In the section west of that dividing line, Pensacola is the principal city and shipping point, and Jacksonville has a similar importance in the section east of the river.

FLORIDA'S PROPORTION

Following further the suggestion of these figures, it appears that fifty-six percent of Florida's product, or thirty and twenty-five hundredths percent of the world's production, comes from the Jacksonville territory, and from the Pensacola territory forty-four percent of Florida's product, or twenty-three and seventy-five hundredths percent of the world's supply. These figures establish Florida's right to claim the two cities first in importance in the world in this immense industry; for it is in these cities that the operations in the respective territories are financed and directed. While the value of the product in the Jacksonville territory was approximately $10,880,000, the amount of working capital required to finance the industry far exceeds the value of the annual crop.

The methods of operating this industry in Florida merit brief description. Nearly one-half the acreage of this state was originally covered with pine forests. As these lands passed from the ownership of the state or the Federal Government they were still held in immense, unbroken tracts by individuals or corporations. Their development by subdivision into farms proceeded but slowly, and principally along the lines of newly constructed railroads. It was further retarded by the recognized value of the timber and naval stores. The importance of this interest is recognized when it is recalled that less than six percent of the presumably arable lands of the state are under cultivation today.

TURPENTINE LEASES

And so, in clearing away these forests, the naval stores producer, "the turpentine farmer" as he is sometimes called, came first; and when he had exhausted the pine trees for his purposes, the lumberman followed with his sawmills and the land was cleared of its trees of merchantable sizes. And then the farmer and fruit grower came to occupy the country, the first permanent occupants of the soil.

Where the land was not purchased outright by the turpentine farmer, he gained possession by lease for a specified term of years, which gave him the right to use its resources in the production of naval stores. During the continuance of the lease, it became, in a measure, a cloud upon the title of the land and any change of ownership was made subject to these leases, which in fact excluded the new owner, as it had the former one, from actual occupancy. Hundreds of thousands of acres of land in Florida are held under such turpentine leases which eventually will become rich farming sections.

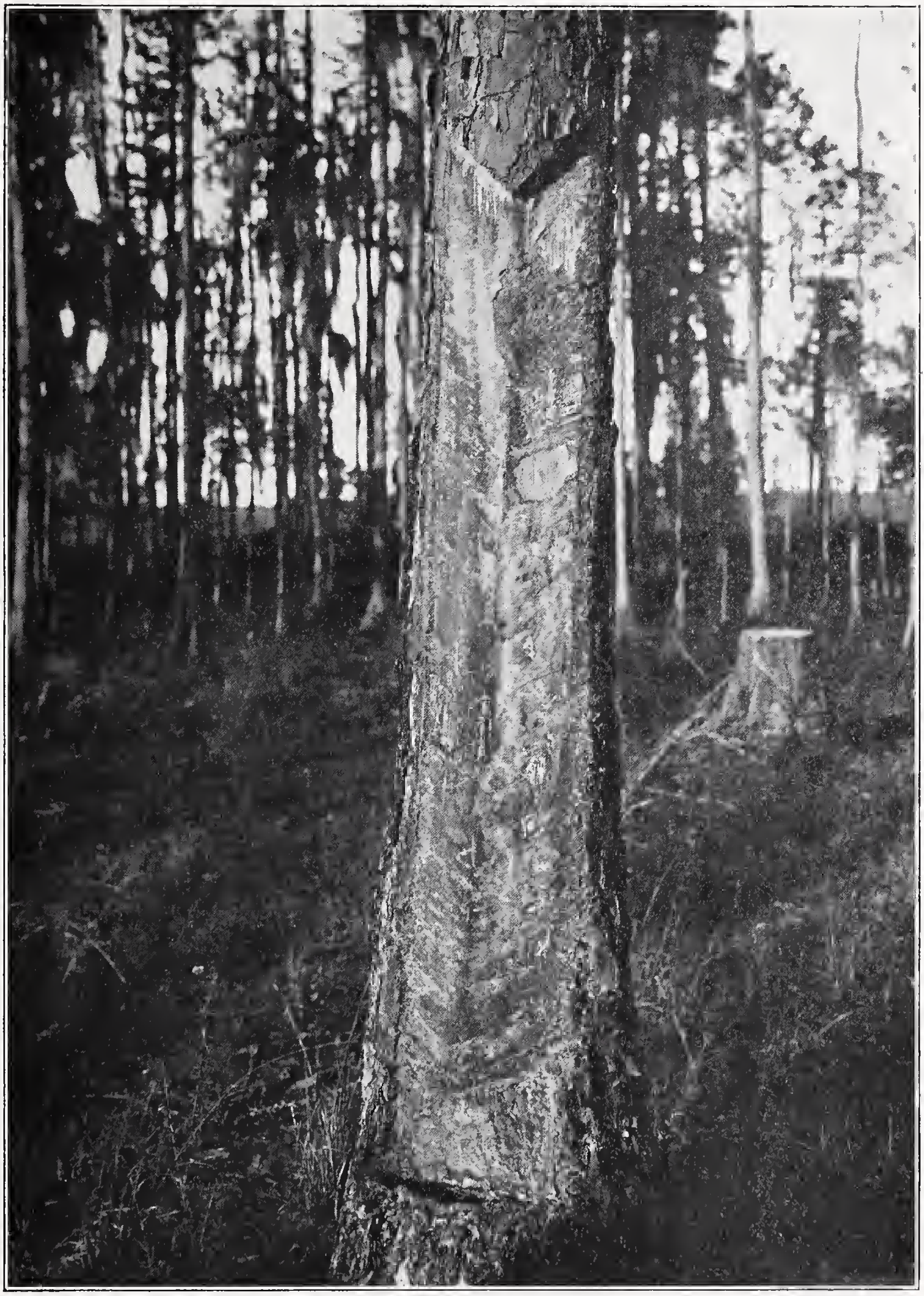
BOXING AND CUPPING

The method of obtaining the sap from the pine tree is, or formerly was, by "boxing," which was a scarifying of the tree through the bark and into the live wood a perpendicular cut several inches wide and from two to four feet long, and at the bottom cutting a deep pocket into the tree, in which the sap collected as it flowed from the wound. As the scar healed or was covered by the gum of the sap, is was cut over again to renew the flow of the sap. The life of a vigorous pine tree is shortened by such treatment by half a dozen years, more or less, according to its vitality, and then it belongs to the lumberman.

This method, however, has given place in most sections of the south to less destructive and less exhausting means of securing the sap. A metal cup is attached to the tree at the lower end of the scar, which is made not so deep into the tree nor over so wide a surface as by boxing. And so "cupping" has practically replaced boxing in the woods of Florida. The change, it is claimed, has indefinitely prolonged the life of the industry in this state, and has warded off for years the destruction of one of the greatest natural resources of Florida.

CONVICT LABOR

The Florida turpentine camp is no less interesting than its lumber camps or its phosphate mines. A large portion of the turpentine farmers have but small capital and require financial assistance until they can sell their annual crops. This is furnished by one or two large corporations which advance credit in the form of tools, sup-



PINE TREE BOXED

plies or groceries and cash, taking as security the exclusive right to handle the crop. In many of the turpentine camps convict labor is used almost entirely, and the convicts are leased from the state under a system which still prevails in Florida, but which is likely to be abolished at an early date. The lease by which the labor of the convicts is secured, obligates the lessee to house, feed, clothe and guard the prisoners under regulations fixed by the state and enforced by a thorough and careful system of inspection.

The labor of gathering a turpentine crop is in the boxing or cupping the trees, gathering the sap and bringing it to the still, and in the operation of distillation. These operations demand no high degree of skill, and the average ability of the negro convict is sufficient. The process of distilling, however, is usually directed by free labor and from the still the product is barreled ready for shipment.

NAVAL STORES MARKETING

The chief market for the naval stores product of Florida has been for years at Savannah. The Georgia city has been the greatest single shipping point for naval stores in the world. Here have been gathered the greatest on-hand stocks of turpentine and rosin, and here the prices for consumers all over the world have been determined, presumably by the relation of supply and demand of which a most complete knowledge was available here. Immense aggregations of capital have been necessary to maintain this supremacy. The recent liquidation of this power as a single identity has made possible a change of supremacy. It is natural that the control in any market, so far as it can be controlled, should be at the point or points where are held the largest stocks of goods. The financial interests which are backing the naval stores industry in Florida are centered at Jacksonville and Pensacola. The latter city is already one of the most important storage and shipping cities for naval stores in the world. Jacksonville also has a large importance in the same direction. The disintegration of the Savannah interests has made an opportunity to bring to Florida the principal marketing places; and that this opportunity will not be lost is likely to be established within a few months.

The future of the naval stores industry in Florida is uncertain. Hundreds of thousands of acres of virgin pine lands remain to be developed. The methods that have been adopted to conserve these lands have been in part described. Each year more strenuous rules are enforced to reduce the wastage of these resources. Yet the best authorities differ widely in their estimates of the time that may take from Florida its present supremacy in the naval stores industry.

CHAPTER XVII

FLORIDA FISH

THE indulgence in the superlative is distinctively, if not exclusively, an Americanism. With the enthusiasm of youth what is not the most beautiful or largest and commercially the most productive, seems hardly worthy of attention. Yet the temptation to indulge the habit is strong in describing the fish that belong in Florida waters.

The report of the United States Commissioner of Fish and Fisheries is quoted in the facts given herewith. From this it appears that, according to the most recent studies by the experts of the Federal Government, the total number of species of fish known in Florida waters is five hundred and seventy-six, or more than one-sixth of the entire fish fauna of America north of Panama. This number is far larger than is found in any other section of the United States, and it is due to the diversity and peculiarities of climatic conditions found in the state.

Florida's fish fauna is divided into at least five distinct classes: The salt-water fauna of the south Atlantic states; the sub-tropical fauna of the Florida Keys; the Gulf of Mexico fauna; the fresh-water fauna of the lower Mississippi valley; and the fresh-water fauna of the Everglades. Naturally some of these fauna overlap and their distinctions are more or less poorly defined. From Fernandina south to Biscayne Bay are found most of the species characteristic of the Atlantic coast south of Cape Hatteras. From Biscayne Bay to Key West and the Tortugas is found a fish fauna marvelous in its multitude of species and in their richness of coloration.

The fish fauna of the Florida Keys resembles closely that of Cuba. The warm waters of the keys serve more or less as a barrier to the passage of fishes living in colder waters and as a result, many species are found on the Atlantic coast of Florida which do not occur on the Gulf side, and vice versa. Indeed, so many species are found on the west coast that are not known on the east coast, that the two sides of the state may be regarded as having separate fauna.

FRESH WATER SPECIES

Of the 576 species known in Florida waters, sixty-one are fresh-water fish, twenty may be regarded as belonging in brackish water, and the remaining 495 are distinctively salt-water varieties. Of the fresh-water species, the only ones of commercial importance are the catfish, pike, sunfish and the large-mouthed black bass. The most southerly locality of Florida from which fresh-water fish have been taken is Miami, eight specimens having been caught there. The United States Fish Commissioner believes that the list will be largely increased when the waters of the state shall be thoroughly explored, and he declares that most important results are expected to be secured in the Everglades, in the interior lakes south of Lake George, and in the streams that cross the northern boundary of the state.

FISH IN BRACKISH WATERS

Among the twenty-one species of fish that inhabit the brackish waters are two varieties of shad. Along the east coast the common shad is frequent and valuable. It occurs regularly and in considerable numbers in the St. Johns and the St. Marys rivers and but rarely in the Indian river. It is not known positively in any other waters of the state. The Alabama shad (*Alosa Alabamae*) is found at Pensacola and probably in other waters fed by the west coast drainage district. Several other varieties of salt-water and fresh-water fish are also found sometimes in brackish waters, and but sixteen species are found in such water and not elsewhere.

SALT-WATER FISH

But the great majority of Florida fish have their habitat in salt water, there being not less than 495 species, including many families and genera. Approximately one hundred and seventy-five species are found along the east coast, two hundred and ninety among the Florida Keys, and about three hundred on the Gulf coast. Several important species are found in the three localities.

TARPON FISHING IN A FLOWER GARDEN, CALOOSAHATCHEE RIVER

KEY WEST FISHERIES

Key West is the most important and interesting of all localities in Florida in its fish varieties, no less than two hundred and fifty species being known there, of which at least one hundred are food fish. The richness of Key West waters in edible fish may be appreciated when their number is compared with other important fishing regions of the United States, and this is shown by the following figures: The south Atlantic states have fifty-five varieties; the middle Atlantic states, fifty; the New England states, forty-eight; the Pacific states, forty; the Great Lakes, sixteen; and the Gulf states (Florida excepted), forty-two. Among the more important varieties of fish handled at Key West are six species of grunts, five of porgies, four of snappers, the hog-fish, kingfish, the Spanish mackerel and three species of mullet, besides sixty or more varieties which are less important.

The methods of handling fish at Key West are unique and conserve the fisheries of that region to the largest possible extent. Practically all fish are caught with hook and line and every fishing boat has a well in which the fish are placed. All salable fish are brought to market in these wells and kept alive until sold. The purchaser selects from these the fish he wants which are then killed and dressed by the fisherman. This method insures perfectly fresh fish and few are lost or wasted.

It also affords the scientist the most satisfactory conditions for studying live fish that are to be found anywhere in the United States, for numerous species of live specimens are always to be found in the wells of these boats. By accompanying the fisherman to the bars and coral reefs it is possible through a water glass to study the many varieties in the clear sea beneath the boat.

With all its wealth of food fish, the waters of Key West region contain no shad, no black bass nor any of the fresh-water varieties. Excepting as stragglers, several other important species of food fish are missing in these waters.

FOOD FISH OF FLORIDA

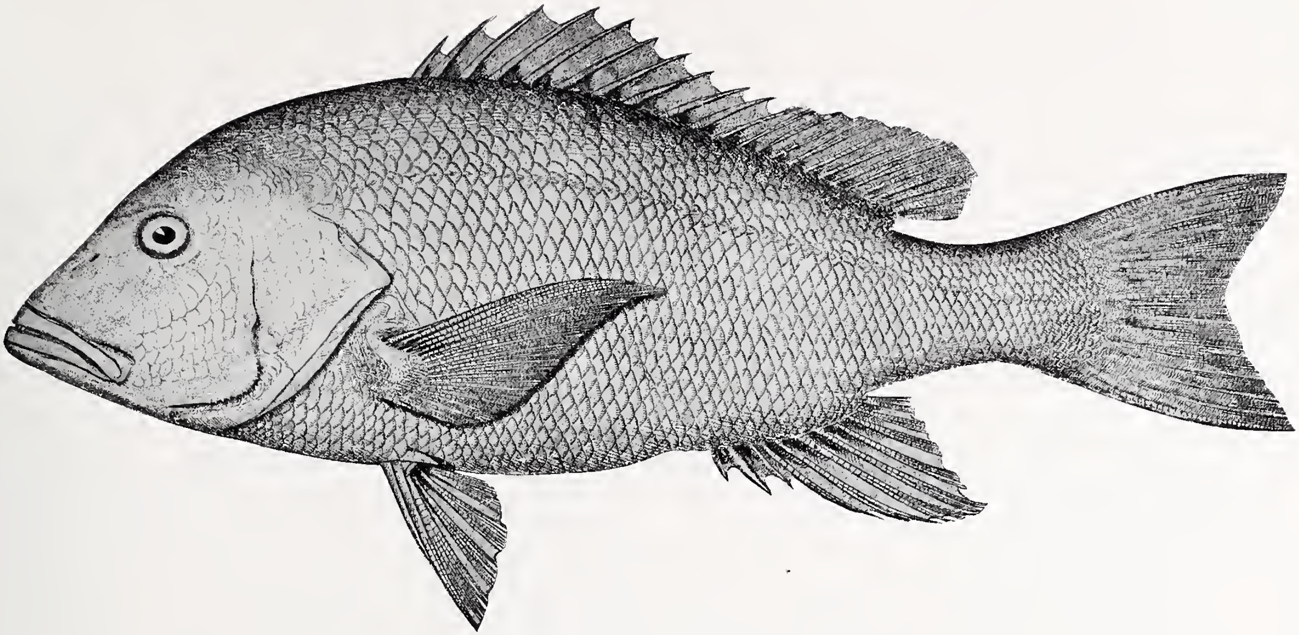
The total number of food fish varieties now known to occur in Florida waters is about one hundred and forty, divided among thirty-six families, and according to the following classification: Sturgeon, one; catfish, four; suckers, two; minnows, one; eels, one; tarpon, two;

lady fish, one; herring, eight; pike, two; needlefish, two; balaos, four; mullet, four; barracuda, two; thread-fin, one; squirrel-fish, one; mackerel, four; cutlas-fish, one; carangidae, fourteen; bluefish, one; sunfish and black bass, ten; robalos, one; sea bass, ten; triple-tail, one; snappers, eight; grunts, twelve; porgies, twelve; majarras, four; rudder-fish, one; croakers, eleven; wrasse fish, one; parrot fish, two; angel fish, one; butterfly fish, three; tangs, three; rock fish, one; and flounders, four. This large number represents about one-twentieth of the entire fish fauna of America north of the equator.

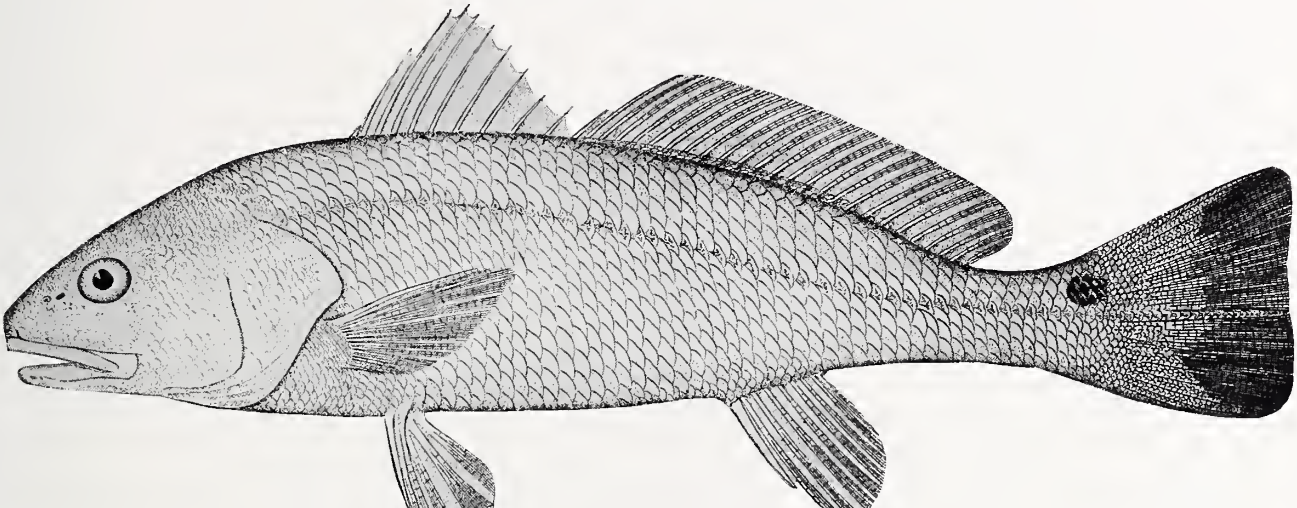
FLORIDA'S GAME FISH

The game fish of Florida are known everywhere. The ambition of every true sportsman, whether he be Florida born or from another state, is the royal fight with the tarpon, the Silver King of all fish. He who loves the sport and who has never taken a tarpon, has in reserve the greatest of all pleasures. Frequently an hour or even more elapses from the time the great fish strikes the three-pound mullet bait on the big hook, before he is landed. When he finds himself entangled, he comes to the surface with a rush and by a magnificent leap throws himself clear of the water and high into the air, his scales glistening in the light like polished silver. Of every trick and twist and turn known to the finny tribe, he is a master. He makes every effort to free himself from the wire leader. The fisherman at the other end of the line must keep it taut. He must be watchful, for a second of forgetfulness may lose the splendid game. With a six-foot, hundred-pound tarpon hooked he has his mind fully occupied, his strength taxed to its limit. And when exhausted by the struggle he gazes at last at the great fish conquered, he feels an increased respect for the splendid instinct that has been matched against his human wit. The game is the most exciting that comes to the fisherman, and the victor has reason to boast of his prowess.

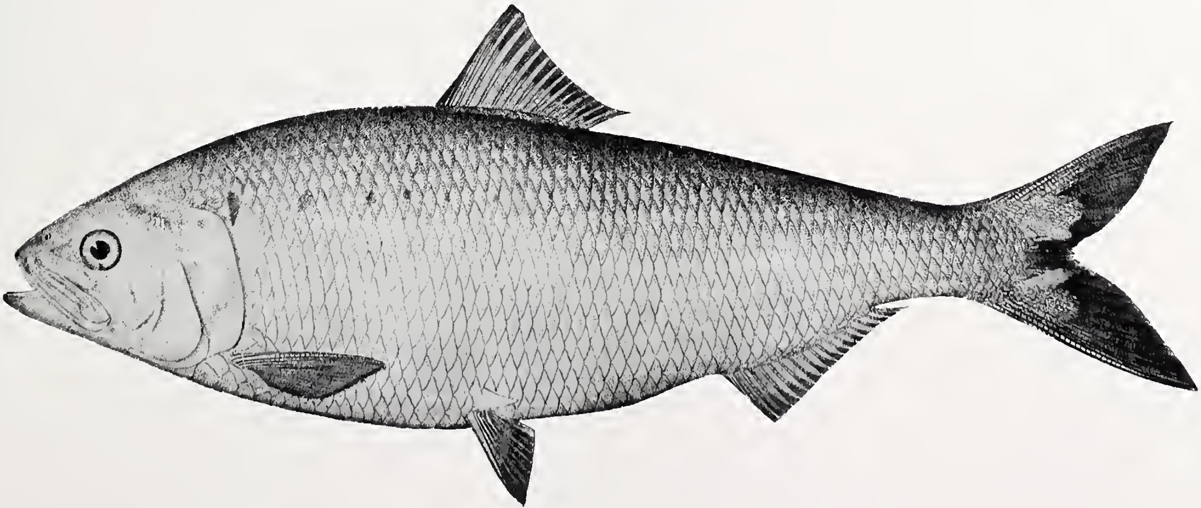
But while the tarpon is the king of game fish in Florida waters, it is by no means the only fighter. Some of the largest black bass known have been caught in these localities. Sunfish here are the largest of their kind. The lady fish and the bone fish are considered by some to equal their relative, the tarpon, in game qualities. Trolling for kingfish, jack, crevalle, bluefish, Spanish mackerel and the spotted sea trout in the Indian river, Lake Worth, at Key West or Biscayne Bay, furnishes sport of the most exciting kind. Still fishing for sheepshead and mangrove snappers at the Indian River



THE FLORIDA RED SNAPPER



RED-FISH OR BASS OF THE SOUTH



SHAD

inlets, for chubs, porkfish, yellow tails, snappers or grunt at Key West, or for red snappers on the snapper banks, offers variety sufficient to please any angler, no matter what may be his mood.

OTHER WATER RESIDENTS

Besides these, there is a long list of shell-fish valuable for food, including the terrapin and other turtles, several varieties of the lobster family, the shrimp, a considerable variety of eels, crabs and shellfish that are found in no other waters in so large numbers or so many kinds.

The crocodile, closely related to his African cousin, is found in several localities. The alligator is one of the well known natives of Florida whose presence in many waters has become rare because of the value of his hide and the insatiable curiosity of tourists. The manatee, or sea cow, is a massive mammal which is found only in Florida streams and there but rarely. It is said that it inhabits South American rivers, but some authorities question that the two belong to the same species, so great are their differences. It is seen but seldom in Florida, and although it formerly was found in large numbers along the lower Indian river, it seems to have retreated before advancing civilization into the fastnesses of the upper St. Lucie river or into The Everglades. The laws of Florida forbid the killing or capture of the manatee under heavy penalty, and special permission must be obtained from state authorities to have one in possession even for exhibition purposes. This is granted only when it is made to appear that such capture will serve the purposes of scientific research. It is probable that its final extinction will be a matter of but few years, unless special protection shall be given to the comparatively few specimens by private patronage.

Of the food fish of Florida the shad and mullet are probably the most valuable commercially and they are in great demand. The pompano of the Indian river, the Spanish mackerel and a few others are much sought for their delicious qualities, and they form a large part of the winter and spring commerce of the lower east coast. They are taken with hook and line and as they are decidedly game, they afford real sport to the fisherman, professional and amateur, and they are much sought after by sport-loving visitors to the state. The red snapper, the channel bass and a score of other varieties are interesting to the genuine sportsman.

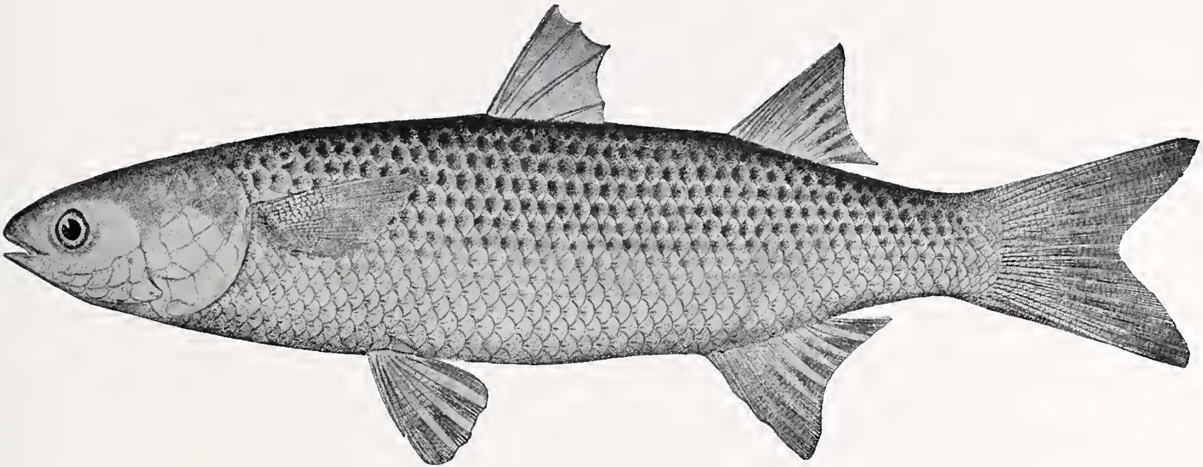
COMMERCIAL VALUE OF FLORIDA'S FISHERIES

The fisheries of Florida are potentially the source of an annual income sufficient to pay at least one-half of the expenses of the state government. Actually not one cent is paid into the state treasury from this source, not even enough to pay for the proper policing of these prolific waters. Some authorities have declared that a proper supervision of the oyster beds alone would produce an income exceeding eight hundred thousand dollars a year, which is an approximate estimate of what their government costs the people of Florida each year. These authorities insist that this sum might be realized without in any way infringing upon the rights of individuals. The indifference is apparently the cause of the neglect to enforce existing laws, for the statute books contain provisions for the conservation and protection of food and game fish, but they contain no measures by which this revenue may be collected, excepting by the levying of fines for violations of statutes through the machinery of county organizations.

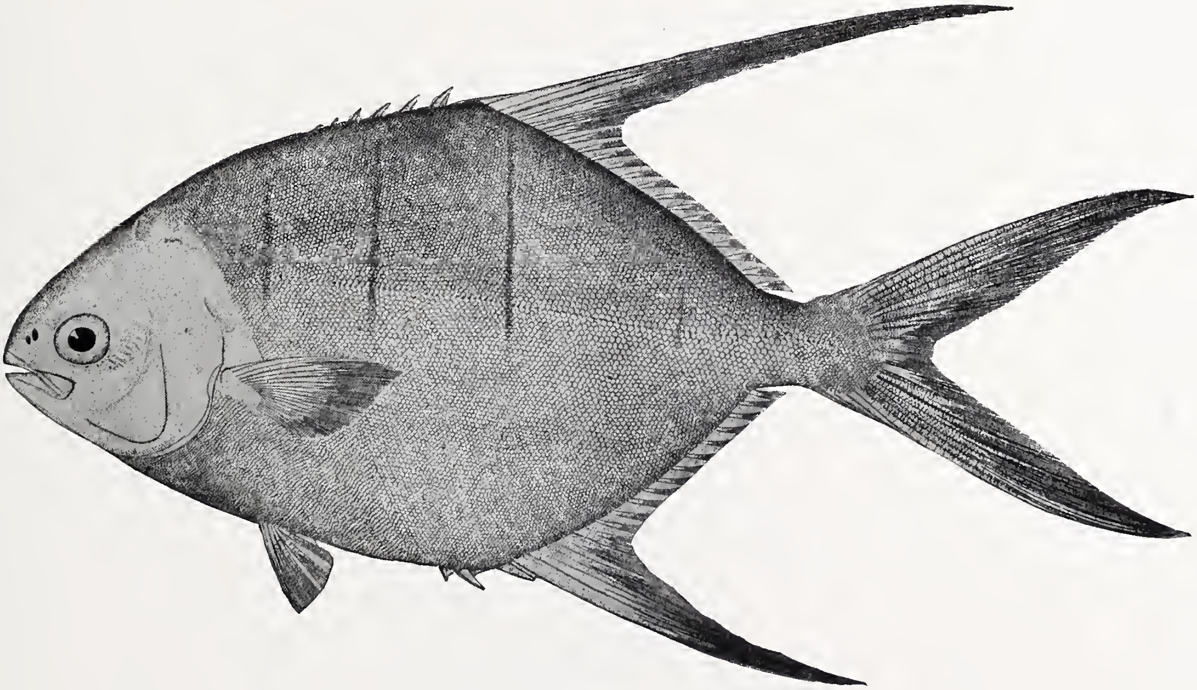
FLORIDA'S WATER AREA

The shore line of Florida, from the Perdido river to the St. Marys, extends something more than eleven hundred miles, and this does not include the meanderings of bays and inlets, which increase the length probably to more than fifteen hundred miles. The area of salt-water bays and inlets may be safely estimated at not less than two hundred and sixty-five thousand acres, not including the larger bays at Pensacola, Cedar Keys, Tampa, Charlotte Harbor on the Gulf side, and not including the entire east coast of the state. It is quite safe to estimate at a full half-million acres the area under the jurisdiction of Florida, which is suitable for the cultivation of the oyster alone. When the eleven hundred miles of sea coast is multiplied by the three leagues of width which, by the State Constitution, are made a part of Florida, some idea may be had of the enormous superficial surface available for shallow and deep-water fishing that is controlled by state authority.

The area of Florida's fresh-water lakes and streams is hardly less than two and a half million acres, and these teem with fish of many varieties, where they have not been depleted by the demands of commerce for these products.



THE STRIPED MULLET



POMPANO

LEGISLATIVE PROTECTION

What has Florida done to protect her fisheries?

The State Legislature of 1889 authorized the appointment by the Governor of a Commission of Fisheries, to consist of three members. It defined their duties to have supervision over the fish and oyster interests of the state and to enforce the laws for their preservation and protection, and it limited their compensation to a sum not to exceed one hundred and fifty dollars a year for each of the three commissioners, making no allowance for necessary expenses.

The Legislature of 1905 repealed this provision, but this adverse action was without the approval of Governor Broward, then the chief executive. The same Legislature provided for the appointment by the Governor of a fish and game warden in each county upon the petition of seventy-five freeholders in the county, and such officer was given the right to name deputies to assist him. The rewards attached to the office were one-half of the fines levied and collected for the infractions of the game laws.

The laws relating to the fisheries of the state were supposed to be mainly for the protection of food fish, particularly the shad, and they included special enactments covering certain specified waters, lakes and streams. They undertook to regulate the use of seines and prohibited their employment for taking several varieties of fish. They forbade the taking of food fish by persons not citizens of the United States for the purpose of exporting them outside the state, excepting under the protection of special license. Persons not residents of Florida were required to secure licenses to catch fish in Florida waters, excepting for their own use, and the penalty was fixed at a fine not exceeding $1,000. The oyster was nominally protected by the provision that it should not be molested from May first to October first, excepting for home consumption.

While the existing laws seem to provide ample protection for fish, the state-wide and general indifference to their strict enforcement has made them of little avail. They provide no hatcheries for the propagation of valuable varieties, and in the years past there has been a marked failure to cooperate with the National Fish Commission in re-stocking Florida waters. There seems to be little appreciation of the value of this asset. The apparently inexhaustible schools of fish that once filled these streams and bays and inlets, have induced the blind belief that they could never be depleted and that the natural increase would supply for all time every demand that could be made.

RESULTS OF INDIFFERENCE

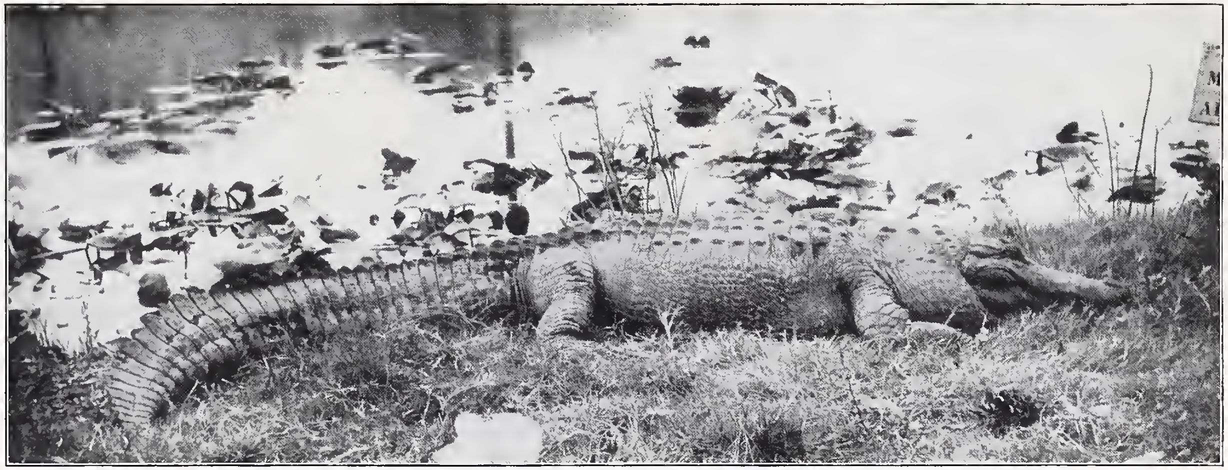
That this is an unsafe theory has become evident in numerous localities. Where even ten years ago the sportsmen could take splendid strings of many varieties within a few hours, as many days now fail to bring like rewards. The records of shipments by express to points outside the state, of fish caught in Florida waters in four years —from 1903 to 1906, both included—was more than 550,000 barrels. These shipments—111,500,000 pounds—at the low value of 5 cents a pound, were worth $5,750,000, and from this not a cent of revenue came to the state of Florida. These shipments, be it remembered, were by express only and did not include an incalculable amount shipped in bulk in carload lots. Nor did they include an enormous aggregate of waste of fish taken and thrown away because they were too small for commercial uses.

In spite of the laws made for the protection of shad in the St. Johns river and a few other streams in which this fish is found, they have been almost exhausted of this valuable food, in face of the fact that less than ten years ago the fish commissioner of Florida in co-operation with the United States Fish Commission, planted fifteen million shad fry in these waters, without a dollar of expense to the state.

OYSTER CULTIVATION

The possibilities of the oyster as a source of income to the state have already been hinted. The estimate of half a million acres of waters under the jurisdiction of the state suitable for this culture, is not an overestimate. For this cultivation certain conditions are essential, which are found in perfection in many localities. Of the greatest importance is the salinity of the water with the reasonable prospect of its permanence. The proper density of water for the oyster is between 1.011 and 1.018, although 1.002 will serve to keep up an existence for a limited period. The measurements are made with the salinometer, pure water being rated at 1.000.

Another important requisite is the character of the bottom, which should be sufficiently hard to prevent the young oyster during its period of fixation from being smothered in mud or covered with sand. The conditions favorable for oyster culture abound in much larger degree and extent on the Gulf coast than on the Atlantic side. This



FLORIDA ALLIGATOR

is due to the fact that the gulf is fed by many streams, and these are fewer on the east coast.

Along the east coast are several localities in which valuable natural oyster beds are found, as near the mouth of the St. Johns river and bar; at and below St. Augustime along the Matanzas river, where a number of fresh-water streams reach salt water; and at or near Ormond, Daytona and New Smyrna. On the western side of the state such beds are found in large areas from Pensacola to Tampa and even south of that important point.

As a source of income these oyster beds might be made most valuable if proper legislation and its rigid enforcement were insisted upon. How great this revenue might become, must be largely a matter of speculation, but dependable deductions may be drawn from the actual experience of other states.

VALUE OF THE INDUSTRY

Rhode Island, whose oyster products are in no way superior in quality to those of Florida, has a shore line of one hundred miles, not including the meanderings of bays and inlets, as compared with eleven hundred miles for the great southern peninsula. The area of Florida's oyster beds may be regarded as greater than those of the little New England state in the proportion that its shore line is longer. The Shell Fish Commission of that northern state was first named in 1864. In that year its gross receipts from the oyster products were sixty-one dollars. They were more than one hundred thousand dollars in 1908. This income was derived from the leasing of the oyster waters, the charge being from five to ten dollars a year an acre, the variations being according to the quality and quantity of the product.

The reports from the oyster and shell fish industries controlled by Virginia and Maryland show confirmatory results. It is unnecessary to carry the calculations further to show the possibilities of Florida's half million acres, which are adapted to the cultivation of this bivalve. Under the system of intensive cultivation practiced by the industrious and ingenious Japanese, it is claimed that every square yard of oyster bed surface may be made to produce one bushel every eighteen months. Under present American methods, fostered by due diligence and watchfulness, every acre should produce one thousand bushels every two years.

SHELL FISH PROTECTION

A realization of the necessity for immediate action in order that the oyster industry might not be entirely destroyed in Florida, resulted in the passage of an important act by the Legislature of 1913. This act provided for the appointment of an officer to be known as the Shell Fish Commissioner, who is to act under the State Commissioner of Agriculture. The act asserted the ownership by Florida in the oyster beds and other shell fish bottoms under the jurisdiction of the state. It gave to the Shell Fish Commissioner and his deputies, police powers to enforce the provisions of the act. It provided for the leasing of oyster and other shell fish bottoms only to citizens of Florida or to corporations legally authorized to do business in the state. It limited to five hundred acres the area that may be rented to any one lessee, with the provision that the entire area shall be improved for the propagation of the shell fish contemplated in the lease, within a given period. It provided for a tax of two cents on every barrel of unshucked oysters or other shell fish that may be taken from these leased bottoms, and for a rental of fifty cents an acre per year for the lease of such bottoms, which at the expiration of ten years may be increased to a minimum of one dollar an acre. Certain other licenses were provided on each vessel used in the taking of shell fish, and the act made the closed season in which oysters may not be taken, from April fifteenth to October first of each year. It imposed penalties for violation of the act proportionate to the gravity of the offence. The cooperation of the commissioners of the several counties of the state were enlisted by granting them the authority to appropriate funds for the improvement of the bottoms within their jurisdictions, and an appropriation of ten thousand dollars was authorized for the improvement of the natural oyster beds of the state.

The wisdom of the Governor has been shown in the selection of a man of energy and discretion for the position of Shell Fish Commissioner, and it is reasonable to anticipate that this splendid resource of the state will be restored within the next ten to fifteen years to its former productive value.

CHAPTER XVIII

FLORIDA SPONGE FISHERIES

OF THE world's supply of sponges, Florida waters, next to the Mediterranean, are the largest producer, and a little city on the west coast of the state—Tarpon Springs—is the market place for nine-tenths of the supply that Florida, or the United States furnishes. The industry is unique from the fact that it is carried on mainly, almost exclusively, by foreigners, with whom native labor has been unable to compete.

Of this industry of sponge fishing probably less is known by the average person, than of any other by which an article in common use is produced. The person of average information is probably aware that the sponge comes from salt water and that it is a form of animal life and growth. He might not be aware that more than fifty varieties have been classified by naturalists, and that but few of them have a commercial value, so far as has yet been discovered. He might not know that the wholesale value of the world's annual consumption is less than five million dollars, and that more than one-half of the supply comes from the Mediterranean, and that Florida, the Bahamas and Cuba, in the order named, are the next largest producers.

It is an interesting story, that of these Florida sponge fisheries, one that involves features differing from those of any other industry that flourishes under the protection—or without it—of the Government at Washington. To understand it makes necessary a bit of history.

DISCOVERY IN FLORIDA WATERS

Several merchantable varieties of sponges were found on both sides of the southern half of the Florida peninsula, in the shallow waters of the keys and the Ten Thousand Islands on the Gulf side, more than fifty years ago. The first cargo was shipped from Key West in 1849 and found a ready sale in New York. From that time sponges became an article of commerce from the Island City. Gradually the supply from this section, which had been gathered from less than a thousand square miles along the southern end of the state, was depleted. The discovery of new sponging grounds, which now cover nearly thirty-four hundred square miles along the western side of Florida and extending well out into the Gulf of Mexico, brought the center of the industry to Tarpon Springs. Less than ten years ago the marketing place of the largest supply was wrested from Key West, and now ninety-five percent of the American sponge harvest is handled through the smaller city on the gulf.

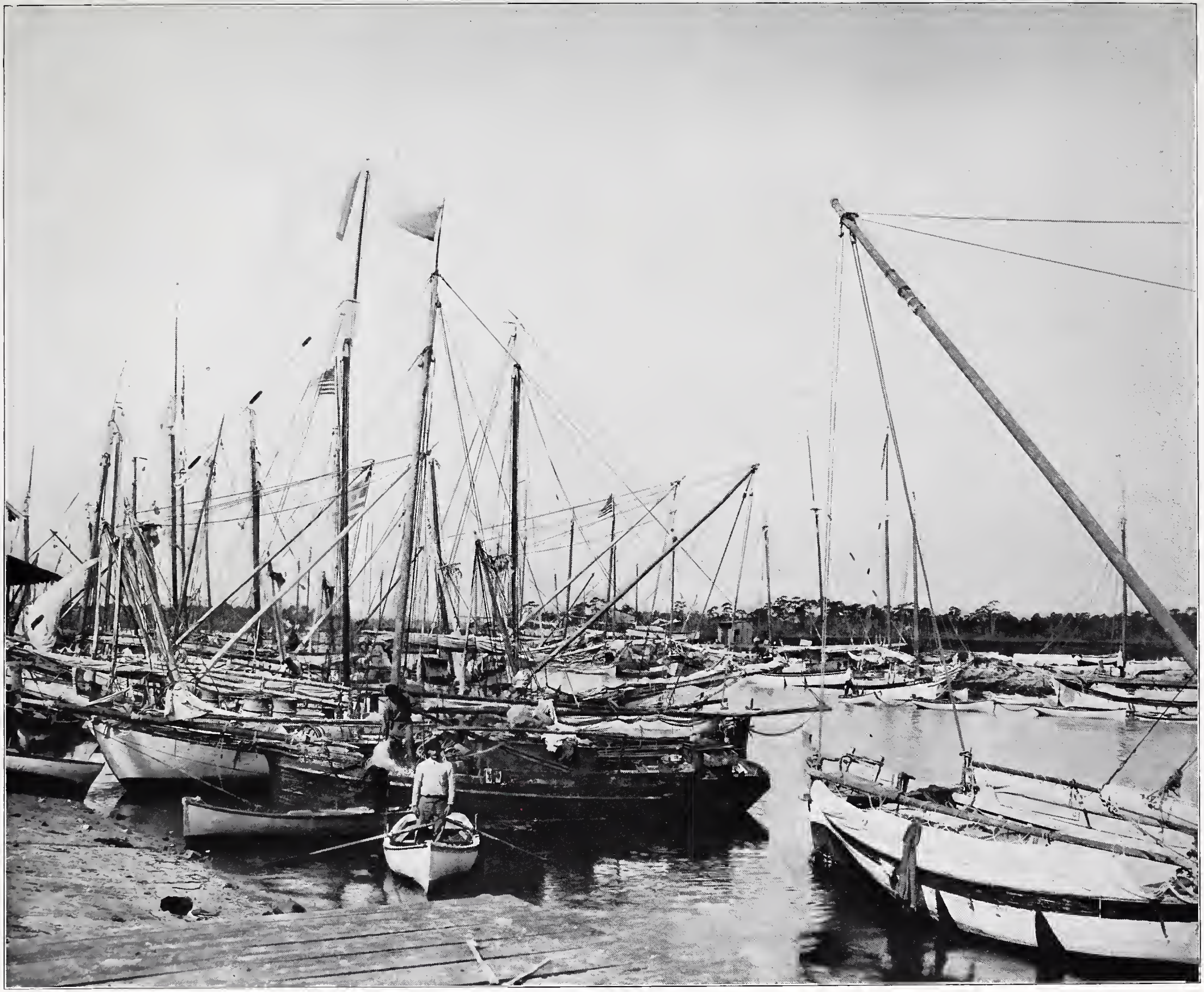
METHODS OF SPONGING

The first sponges were those washed up from the sea. The next were those pulled from their anchorages in shallow waters by fishermen wading or diving for them. Then came the three-tined hook with which the sponges were gathered from boats. Gradually the handles on these hooks were lengthened to thirty or forty feet, so that the work could be carried on in deeper water. It happened, however, that the hook could sometimes be manipulated in deeper water than the eye could penetrate clearly. The surface ripples interrupted the vision, and to remedy this came the water glass, which is an ordinary bucket fitted with a glass bottom. With this the disturbing glare was cut off and the "hooker" could see the sponges in five or six fathoms, which was the limit of depth in which he could handle the cumbersome hook.

This method, however primitive, was the sole means of gathering the American sponge crop until about 1905, yet it was enough to practically exhaust the waters along the southern and southeastern borders of the state and to move the center of the industry one hundred and fifty miles up the Gulf coast. The rapidly lessening production even of the developed Gulf sponge beds in 1903 and 1904, suggested the employment of the deep-sea methods of Mediterranean waters.

DEEP-SEA DIVING

John Cocoris, a Greek sponger employed at Tarpon Springs, early in 1905 concluded that in spite of unsuccessful attempts previously made to introduce diving operations in these waters, there was really no good reason why the means used in his home waters might not remedy the discouraging conditions in the gulf. Assisted by local capitalists he gathered a few expert Greeks and the necessary equip-



TARPON SPRINGS SPONGE FLEET

ment for the experiment. It was a success and Corcoris' boat became the nucleus for the present sponging fleet, which is manned by two thousand or more of his countrymen.

Of course, the hookers, mainly native Floridians and Bahaman or native negroes, immediately saw their occupation threatened by this invasion of the Greeks. The divers worked in seven to ten fathoms of water, a depth impossible to the hookers, yet the old-timers, unable to meet the new competition, saw only ruin staring them in the face. Accordingly the strong arm of the Federal Government was brought in to protect them by the enforcement of the alien labor laws.

The revenue service men were sent to the rescue. They came and sought evidence of infractions, but they discovered none, and the reason was simple—it was because the Government has no jurisdiction outside the three-mile limit. Inside this little league, there was no violation of law observable, or if there was, these officers of the Government failed to find it. But outside, the Greeks were gathering riches from the deeper waters. And so the revenue officers returned to report a fruitless investigation.

CONGRESSIONAL LEGISLATION

But something must be done and after months of careful thinking, a bill was prepared which became a law of the land in June, 1906. It provided that from and after May first, 1907, " It shall be unlawful to land, deliver, cure or offer for sale at any port or place in the United States any sponges taken by means of diving or diving apparatus from the waters of the Gulf of Mexico or Straits of Florida: provided, That sponges taken or gathered by such process between October first and May first of each year in a greater depth of water than fifty feet shall not be subject to the provisions of this Act: and provided further, That no sponges taken from said waters, shall be landed, delivered, cured, or offered for sale at any port or place in the United States of a smaller size than four inches in diameter."

The penalty for violation was a fine of from one hundred to five hundred dollars against each convicted person and against the vessel, or a forfeiture of the vessel and equipment.

Leaving out of consideration the faulty grammatical construction of the last paragraph of the act and its reflection upon the size of "any port or place in the United States" where the sponge trade may or may not be carried on, the interpretation of the law prohibited divers from landing at any place in this country sponges gathered in less than fifty feet of water during the last three and first four months of each year; it prohibited diving operations during the other five months, and both divers and hookers were forbidden to offer for sale at any time sponges of less than four inches in their largest diameter when fully inflated with water, a provision heartily approved by all interested in the trade. This law was the result of the best efforts by the national lawmakers for the protection of native labor engaged in this occupation, against foreign competition. The final conclusion of the matter was that a majority of the natives sought other means of livelihood, while a few accepting the inevitable joined forces with the Greeks, and fewer still continued to hunt sponges with the old fashioned hook.

DIVING EQUIPMENT

The equipment and operation of the Tarpon Springs sponge fleet are copies of Grecian ideas. The principal American innovation is the gasoline engine for propelling the boats to and from the sponging waters. Even the boats themselves follow exactly the Greek models or are direct importations from Mediterranean waters. These foreign models have pointed bows and sterns rising high above the water line, which makes them especially worthy in heavy seas, whether at anchor or under way. The machine boats from which the divers work, carry the latest American-made air pumps, which keep two able-bodied men busy while the diver explores the bottom of the sea beneath them.

The boat's rig is a short mast forward carrying a spritsail, and three long oars or sweeps. A ladder extending two or three feet below the surface and hinged so that it may be swung inboard, is the diver's means of leaving and returning to the boat. These machine boats are usually thirty-two feet long and eleven feet in beam. Fully equipped their cost is not far from two thousand dollars each.

Accompanying each machine boat is the deposit, or living boat, schooner rigged and fitted with a gasoline engine. The larger boats are used as commissary and sleeping quarters for the crews of both boats and for curing and storing the sponge catch. These miniature fleets often cruise in deep water and out of sight of land for six weeks or two months, and the matter of provisioning for a dozen men is a somewhat important problem.

THE DIVER'S ARMOR

The diver's suit is a cumbersome affair. Two thicknesses of double water-proofed cotton cloth with rubber between the layers and open at the neck, cover the body completely below the neck, excepting the hands, a close fitting rubber cuff wrapping each wrist. A rubber yoke covers the shoulders and extends over the back and chest.

The helmet is of copper with heavy plate glass windows set in the front and sides and obliquely above the face. A valve admits fresh air through the pump in the boat above by a heavy, rubber lined hose. Another valve is provided for the discharge of vitiated air from the helmet and suit. The first is controlled by the pressure of the air from the pump; the diver opens the second for the egress of breathed air by a backward movement of the head against a projecting metal pin or peg.

In preparing to descend the process is as complicated as when the lady of fashion dresses for an evening reception—the diver has to be assisted in getting into his armor as well as to have it fastened on his body. Thick woolen underclothing and stockings come first, then a heavy coating of soap is rubbed over the wrists to facilitate pulling the rubber cuffs over the hands, and this also serves to make a water-tight contact at the wrists. With the assistance of an impromptu valet the diver works his way into the suit. A breastplate is inserted within the yoke and by the projecting lugs the helmet is screwed down over rubber gaskets to insure a tight jointure between the headpiece and the suit. The air pump must be started as soon as the helmet is closed. Heavily weighted leather shoes tipped and soled with brass are strapped to his feet, front and back weights are lashed over the shoulders, the air hose is brought under the left arm and tied to the waist, and the life line is fastened securely around the body under the arms of the armor.

A robust man in these working clothes tips the scales at four hundred pounds or more in the open air, yet he treads the ocean floor at a depth of fifty or sixty feet with the pressure of only a few pounds. This is due to the density of the water below the ocean surface, and also because of the buoying tendency of the air within the suit. Indeed, air may be allowed to accumulate within the rubber armor to an amount sufficient to bring the diver to the surface from a moderate depth, without the aid of the life line.

To complete his working equipment the diver carries a short-handled, three-pronged fork or hook, with which he tears the sponges from its rock anchorage; also a bag of coarse cotton netting fitted with a metal rim, which opens and closes like the mouth of an old fashioned valise. This by a separate line is used to carry the sponges to the vessel's deck. The life line is also a signal line to the crew on the vessel and it is the diver's sole means of communication with those above, on whose understanding and prompt obedience of his signalled orders his life often depends.

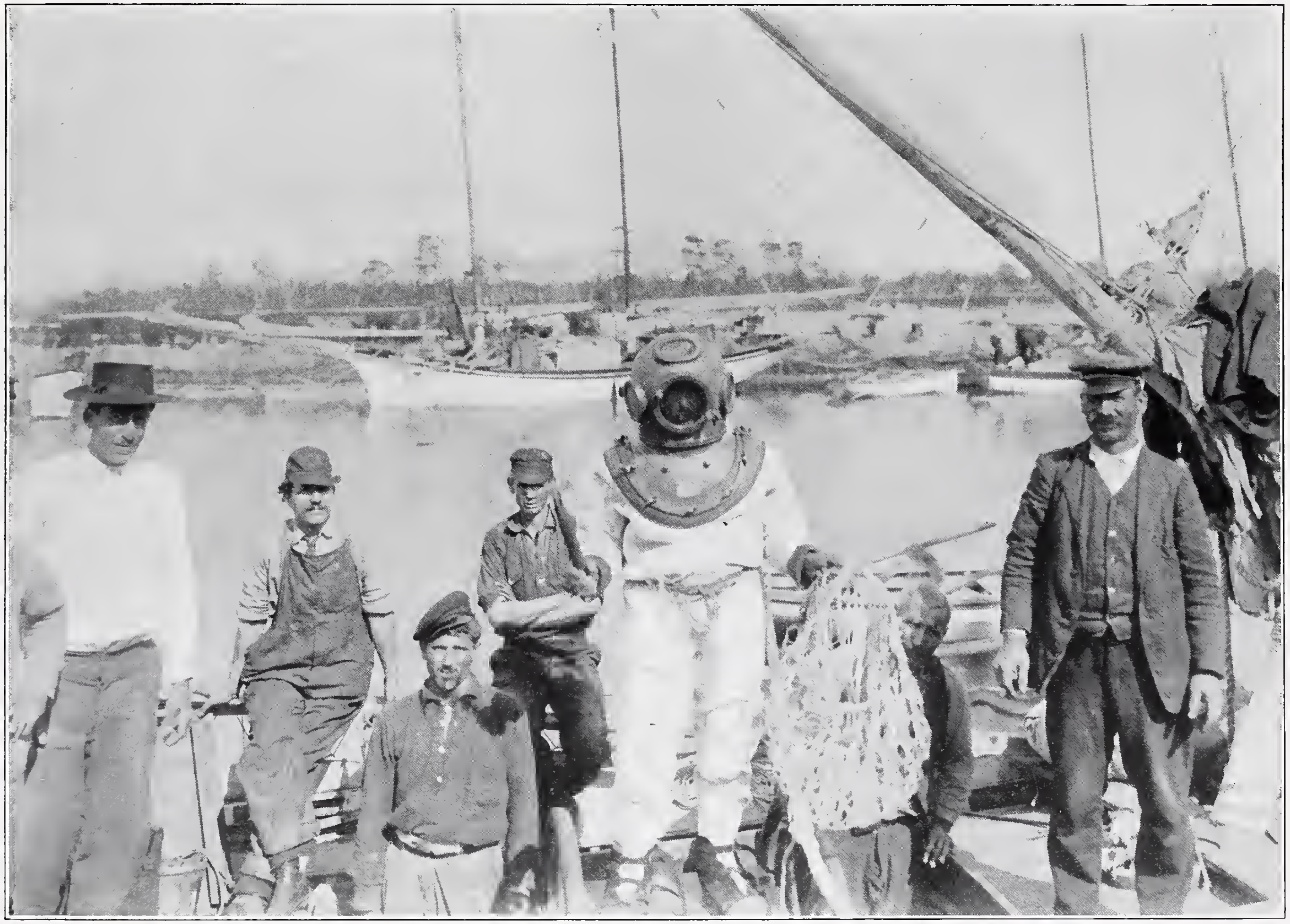
PHYSICAL EQUIPMENT

Only the physically perfect man may safely engage in the hazardous occupation of deep-water diving, and even then only after long apprenticeship in shallower depths. No alcohol user is permitted to make the venture and the diet is regulated with even more rigor than that of the athlete in training. A cup of coffee and a roll or bit of bread for breakfast and a hearty dinner when the day's work is done, are the limits of gastronomic indulgence. A disregard of these rules has been suggested as at least the partial cause of several deaths among the divers of the Tarpon Springs sponge fleet in the past.

The maximum depth to which a diver may descend and the length of time that he may work safely on the ocean's bottom, are matters that limit his efficiency. They vary inversely and probably differ within small limits according to the physical condition of the individual. Sponging in Gulf waters is carried on usually in seventy feet or less. The shift is two hours down and two hours rest, the divers of each crew alternating in their labors. They have worked in one hundred and ten feet and rarely in greater depths in the gulf. With every fathom the diver's liability to heart trouble, caisson fever and other physical ailments increases. Professor H. F. Moore, of the United States Bureau of Fisheries, has declared that the laws of Greece prohibit sponge fishing in depths greater than one hundred and twenty-five feet, and a medical authority is quoted to the effect that one hundred and fifty feet is the limit of safety for a diver in perfect physical condition. The world's record, it is claimed, is a stay of forty-two minutes in two hundred and one feet of water.

CREWS AND THEIR DUTIES

To man the machine boat requires two divers, three oarsmen, two pump men and one expert to handle the life line and answer the diver's signals. The deck men relieve each other frequently because of the



A SPONGING CREW

arduous toil of handling the sweeps and working the pump. The living, or commissary boat, carries in addition a master who, under the laws of the United States, must be an American citizen, a deck hand and a cook, and usually an engineer to care for and operate the motors in both boats.

The pay of the crew is fixed according to a sliding scale. The operator or owner of the boats and their equipment, furnishes these and provisions the little fleet and gets as his share one-half of the gross proceeds of the trip. The remaining half is divided into equal shares, of which each diver, according to his skill and experience, receives from two and a quarter to four shares. The other members of the crew, including the master, get one share each.

GATHERING SPONGES

The newly harvested sponge has little likeness to the commercial article ready for sale, which is in fact, the skeleton of the living organism. In appearance it resembles a piece of raw beef liver and varies in color from a grayish yellow to a dark brown or black. It is slimy and repulsive to the touch. The curing process consists in the removal of the soft gelatinous tissues of the living animal and of the skin that envelops it. The skill and thoroughness with which this is done determines the marketable value of the product. The hookers along the Florida coast used to expose each day's catch to the air on shore and devoted the last day of each week to "cleaning up" the week's harvest. But the divers could not afford to lose one day in seven and so they clean up at sea as the sponges are brought to the surface.

The raw sponges are spread over the deck of the commissary boat where they are beaten with sticks and trampled by the bare feet of the crew, then repeated washings on deck, and finally the sponges are strung on rope yarns, each piece six feet long, and these strings are tied together in "bunches," which are trailed over the vessel's side for the finishing action of sea water. When dry the product is stored in the vessel's hold ready for sale.

The sponge market at Tarpon Springs is controlled by an exchange in whose membership the principal dealers of the United States and Europe are represented by agents. Several independent brokers are also active buyers at the weekly sessions of the exchange. The goods are offered in competitive sale by the pound and go to the highest bidder.

SPONGE VARIETIES

Sponges are classified mainly according to their color and fineness of texture. The principal varieties gathered from the waters of the gulf in the order of their commercial value, are the sheepswool, or wool sponge; the yellow, sometimes called the Anclote yellow; the grass and the wire sponges. Occasionally specimens of velvet sponges and other more valuable grades are found here, but the demand for these is supplied largely from the Mediterranean.

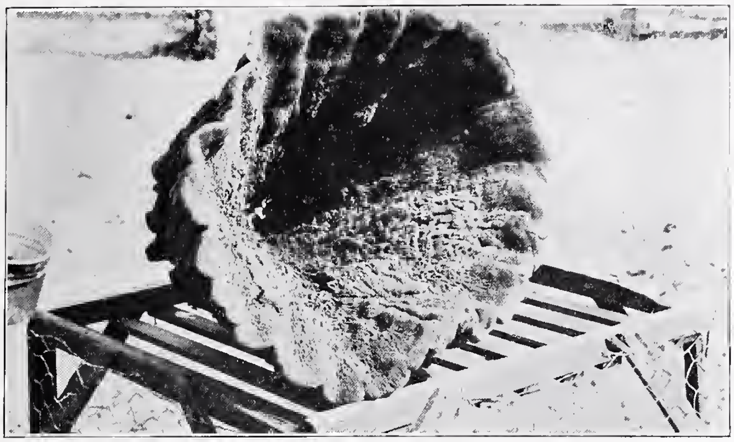
In preparing sponges for the market they are graded according to color, texture and size. "Forms" are the natural sponges ready for the market without trimming or shaping. "Cuts," as the name implies, are the pieces into which the larger sponges are cut to make them marketable; and "seconds" are the more or less imperfect specimens that may not be included in either of the higher grades. According to size they are further divided by the number required to make one pound. There are the sponges larger than one pound in weight, the "twos to threes," the "threes to fours" and on up to the "thirties to forties." They go to market in bales, each package containing a single grade and size and each bale weighs about forty pounds.

The average annual value of the sponge crop taken from Florida waters from 1903 to 1908 was $555,000. The following year it increased to $650,000 and each subsequent year has shown a gradual but not a large increase over each immediately preceding twelve months.

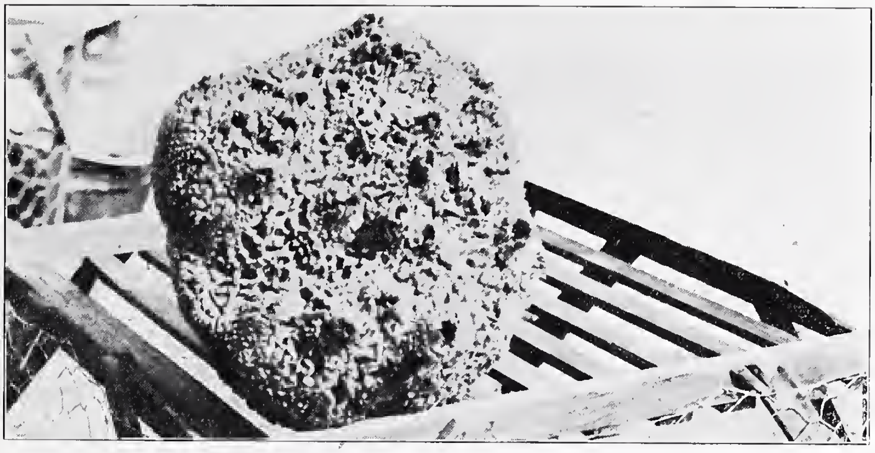
FUTURE OF THE INDUSTRY

But these waters will not always yield the large harvests of recent years. The signs of a diminishing supply are evident and the anxious divers are extending their searching for the hidden treasure to deeper and more distant waters. A hundred miles and more they go from the sandy and marsh-bordered shores. The discovery of new sponging grounds or the repletion of the old ones by artificial propagation are the alternative remedies. The resources of the United States Bureau of Fisheries have not yet been exhaustively applied to the study of propagation, mainly because of the lack of a suitably located and equipped biological station near the sponge fields.

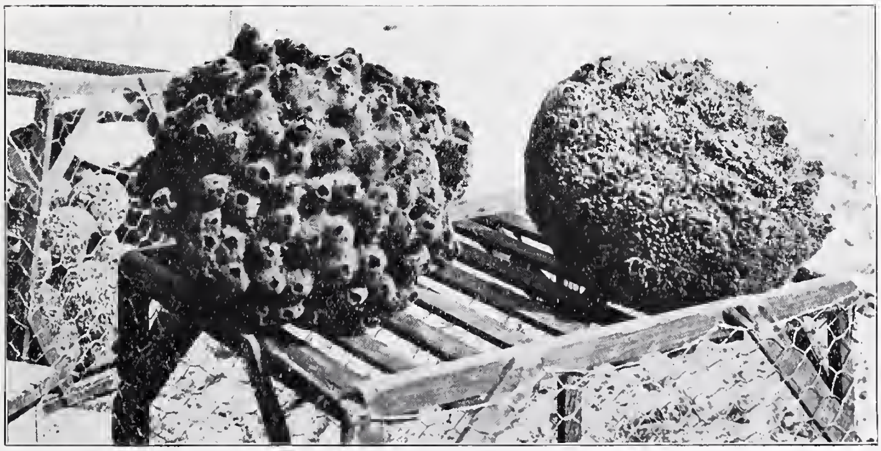
Certain sponge varieties reproduce from the egg. Probably all varieties multiply from cuttings or fragments of the living organism. The newly hatched sponge is a free swimming body, which may be



GRASS SPONGE



YELLOW SPONGE



WOOL SPONGES

carried by tides and currents long distances before it anchors to its permanent abiding place. The tender young animal may be smothered by sand or sediment or be overcome by the rank vegetation on the sea bottom, and many young sponges are killed by these natural causes. Artificial propagation through the egg is a practically unknown problem.

Experiments have shown several important facts: That sponges may be propagated from cuttings of the living parent sponge; that fresh water is fatal to sponge growth at any stage of its development; that a degree of salinity varying even little from that indicated by the specific gravity of water of 1.019 is not favorable to it, and that the normal growth of the sponge under favoring conditions is from one inch to an inch and a quarter a year.

Further experiments at Tarpon Springs were begun by attaching cubes of live sponge an inch in each dimension to wire and anchoring them in salt water. The wire used was of copper, iron, steel and aluminum, but each failed of success. The wire was then covered with a lead coating to avoid corrosion, but it was found that wire was not the proper base and further ideas were worked out. Imitating nature, disks of concrete, resembling rock, the base sought by the sponge itself, were prepared an inch or more in thickness and a foot in diameter. To these the live cuttings were attached by aluminum wire, which served the purpose until the little sponges fastened themselves by their own roots to their artificial anchorages. The disks were then placed in deep water on a favorably clear bottom, there to remain until the cuttings should develop into sponges of merchantable sizes in from three to ten years. This plan showed more signs of success than any experiments that had preceded.

DANGERS OF PIRACY

But the sponge farmers were confronted by another perplexity, which has not yet been worked out to their satisfaction. No man may claim the ownership of lands or leases outside the three-mile limit and make good the claim. He may not call on the Federal Government to protect him in his control of his plantings, and within that limit of a league a lease from the state must be guarded by his own constant vigilance. Practically to the finder belong the sponges he may find and piracy is the never-ending menace.

It is a problem to be solved and that it will be solved can not be doubted by him who has faith in the accomplishments of American perseverance and ingenuity. Capital and science will find a way to make this industry one of the most important and profitable in the waters controlled by Florida's jurisdiction. The development of these sponge fisheries into a permanent and increasingly valuable industry awaits the coming of the man or men who will have sufficient faith to work for and await results.

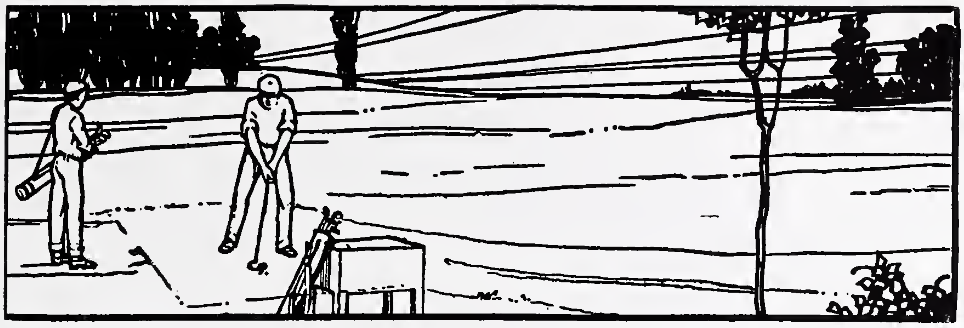
SOCIOLOGICAL CONDITIONS

There is another side to this sponge industry that centers at this little Florida city. It is the sociological conditions of these Greek workers, and they have some valuable suggestions for the student of such matters. The census of 1910 gave to Tarpon Springs a population somewhere above three thousand, seven hundred, probably about fifteen hundred less than was its due. The conscientious enumerator following official instructions to get his facts and figures at the homes of the citizens, considered his duty properly performed when he had obeyed these instructions to the letter. But during the time allowed for taking the census, hundreds of the Greeks and their assistants were far out at sea and the names of these bona fide residents found no place on the rolls.

Yet these Greeks, many of them among the best citizens of Pinellas county, own real estate and other property in this pretty city. They own and operate nearly one-half of the mercantile establishments and hold blocks of stock in the local banks. They put their savings into substantial investments. Some of them have accumulated wealth and occupy beautiful homes along the bay and on the principal streets. A thousand or more of them are members of a club whose object is to foster American citizenship among the race. A requisite for membership is that the applicant must be already a citizen or have declared his intention in that direction. The same organization encourages sobriety, morality and industry. The Greek Catholic Church has here a strong organization and its splendid ceremonials at Easter and on other festal days are almost magnificent in their picturesque gorgeousness.

CHAPTER XIX

FLORIDA SCHOOL SYSTEM



THAT its citizens should be intelligent and that the education of the masses should be fostered, was a fundamental idea in the organization of Florida as a state.

The act of Congress which gave statehood to the great southern peninsula was accompanied by a supplemental act providing a liberal endowment for the establishment and maintenance of schools, which should become a more valuable income-producing investment as the state grew to greater commercial importance and as the demand for educational facilities should increase. The plan inaugurated with Florida's admission to the Union of States, is the foundation of the system of education which has grown with the growth of the state.

The history of the educational system of every new section illustrates the fact that pioneers are not the builders of colleges and high schools. The fight for existence is too strenuous and the available resources are too few to foster the erection of educational institutions. And so it comes that the common school system, which is the boast of all Americans, has been the development of later decades and of later generations than those that have hewn their way into unbroken forests and built and protected their early homes in the wilderness.

Florida, in its struggle against Spanish rule and Indian aggression, has been no exception to this fact of history. During the period of territorial development from the time of its cession to the United States Government, Florida's citizens, aided little by their own government, made more or less futile efforts to establish a free school system. But its growth was hampered by the lack of funds and by the idea which prevailed largely among the people that the patronage of free schools implied the acceptance of charity. Wealthy families employed private tutors for their children or sent them to the schools and colleges of other and older states. Time and public sentiment eventually corrected this false idea, but not until Florida reached the degree of statehood was the foundation laid for the school system which has grown to large proportions and which promises in its ultimate development generous provisions for all the people, from the highest to the most humble, and instruction in all grades from the kindergarten to the university.

LAND GRANTS FOR SCHOOLS

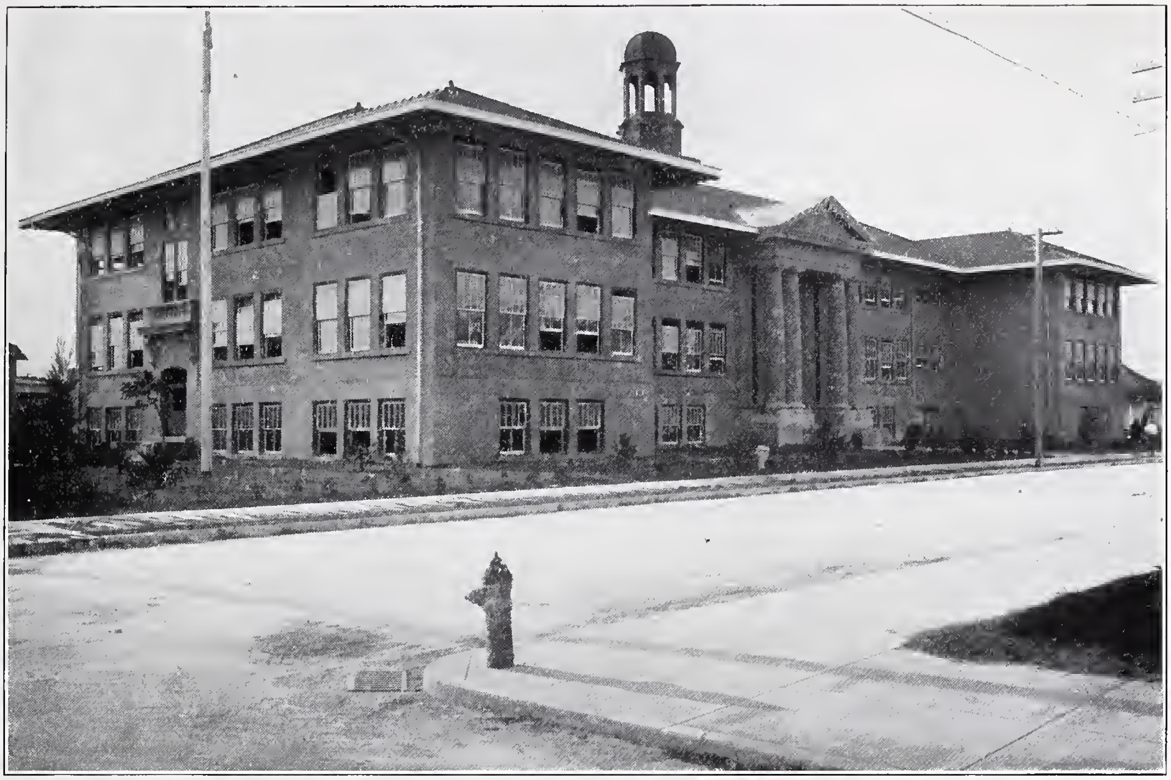
An act of Congress, adopted March 3, 1845, advanced Florida from a territory of the United States to full statehood. A supplementary act of the same date granted the new commonwealth eight entire sections of land to establish a seat of government; the sixteenth section of every township, or its equivalent, for the support of public schools; two entire townships for the establishing and maintenance of two seminaries of learning, one to be located east and one west of the Suwanee river; 500,000 acres for internal improvements, and five percent of the net proceeds from the sale of United States Government lands in Florida, to be devoted to the purposes of education.

Of the half million acres for the internal improvement, nearly four hundred thousand acres were subsequently granted as subsidies for the construction of railroads in different parts of Florida. Something more than one hundred thousand were sold, or remain in the ownership of this state.

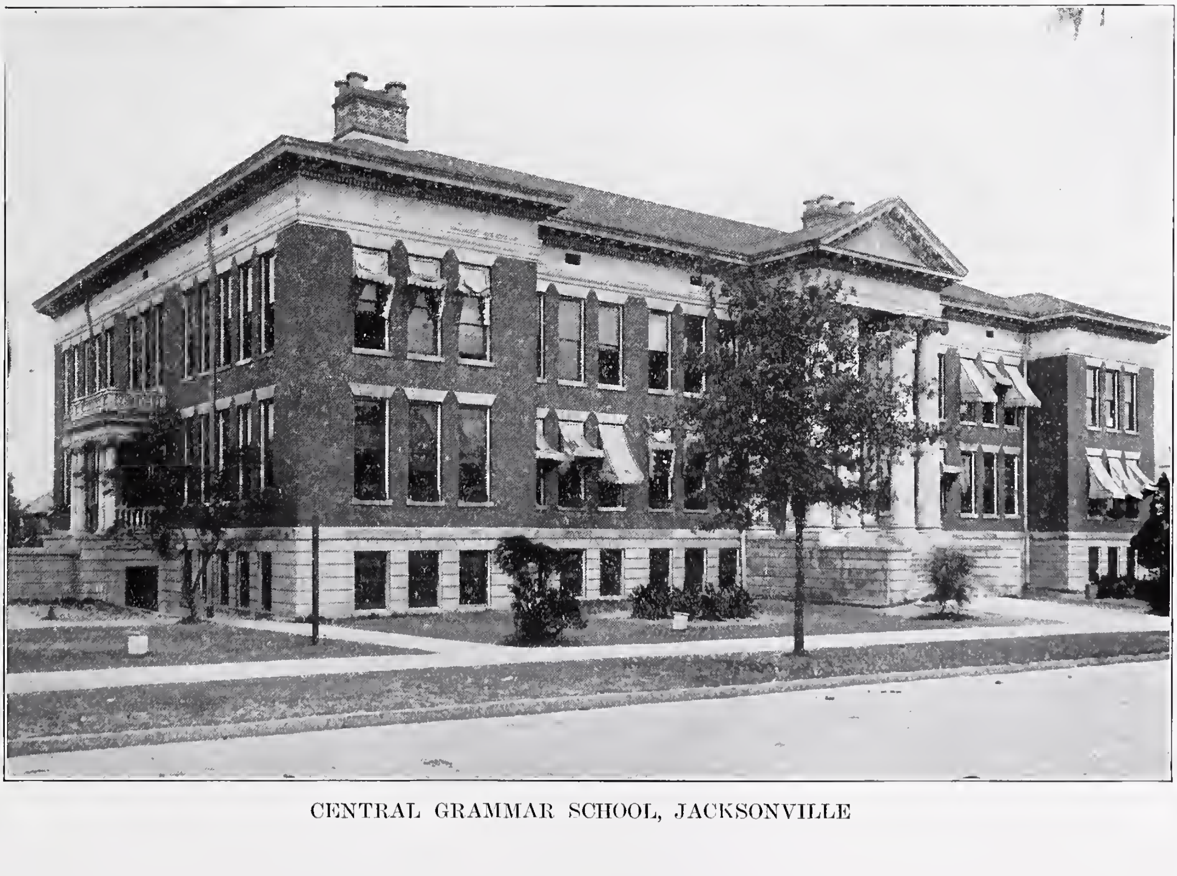
Through the efforts of United States Senator Wescott what was known as the Swamp and Overflowed Land Grant Act was adopted by the Congress of the United States September 28, 1850. An amendment made the act in force in every state of the Union. Under this act, upwards of twenty million acres of land were patented to the state of Florida. The primary purpose of this act, as expressed by Congress, was to aid the states to reclaim their swamp and overflowed lands within their limits by means of drains and levees. The Florida Legislature, by special enactment, provided that twenty-five percent of the proceeds from the sale of these state lands should be added to the educational funds of the state, which, under the Constitution of Florida, may not be diverted to any other purpose whatever.

INTERNAL IMPROVEMENT TRUSTEES

The Legislature, by special enactment in 1851, accepted the grant made by Congress and created a Board of Internal Improvement. A subsequent act, in 1855, created the Trustees of the Internal Improvement Fund, designating as such trustees the Governor, the State



HIGH SCHOOL, MIAMI



CENTRAL GRAMMAR SCHOOL, JACKSONVILLE

Comptroller, Attorney General, Treasurer and Commissioner of Agriculture; and to these trustees were granted irrevocably the lands theretofore granted to the state and remaining unsold, the principal trust being the drainage and reclamation of swamp and overflowed lands.

The payment to the State Board of Education of the twenty-five percent of the proceeds from the sale of lands controlled by the Internal Improvement Trustees was not made for many years. Under the administration of Governor Jennings this omission was discovered. It has been paid from the sales of lands made since November, 1908. An accounting was demanded from the Trustees of the Internal Improvement Fund, to discover what was due from previous sales to the education fund. When this sum shall have been determined and paid, it will add several hundred thousand dollars to the school funds of this state.

The school fund administrated by the State Board of Education amounted at the close of 1911 to nearly one and one-half millions of dollars. It had doubled in the previous ten years. This fund is invested in high class bonds, bearing interest of from three and one-half to five percent. The state school fund also owns approximately two hundred thousand acres in the sixteenth sections of every township in The Everglades, which in the eventual settlement of that section, it is estimated by high authority, should add $5,000,000 of investable funds, available for the support of schools in Florida. Five million dollars additional will eventually be returned when other lands patented to the state under the Swamp and Overflowed Lands Act shall have been sold.

OTHER SOURCES OF INCOME

Another source of income to the school funds arises from the one-mill tax on all assessable property in this state. The fund produced by this tax is distributed to the various counties on a proportionate basis of the number of pupils in attendance on the public schools in each county. This basis of distribution works to the disadvantage of certain counties whose large values of taxable property produces a greater income than the number of pupils in their schools entitles them to draw back from this fund. The method favors those counties in which the property values are less and the number of school attendants larger in proportion. Other sources of income for the support of public schools are the poll taxes, the fines and forfeitures from all state courts and a few other less important sources.

Each county is made a school district and the management of schools is placed in the hands of a board of education, consisting of three members, elected biennially by popular vote. Each county may be divided into sub-districts by a majority vote of the tax payers of any given section within that county. A special tax levy, not to exceed seven mills, may be made and collected and expended for school purposes within that district. The latest compilations show four hundred and eighty-one such sub-districts in the forty-nine counties.

ADMINISTRATION OF SCHOOL FUNDS

The school funds of the state are administered by the Board of Education, which includes the Governor, Secretary of State, Treasurer, Attorney General and the Superintendent of Public Instruction, the latter being secretary of the board.

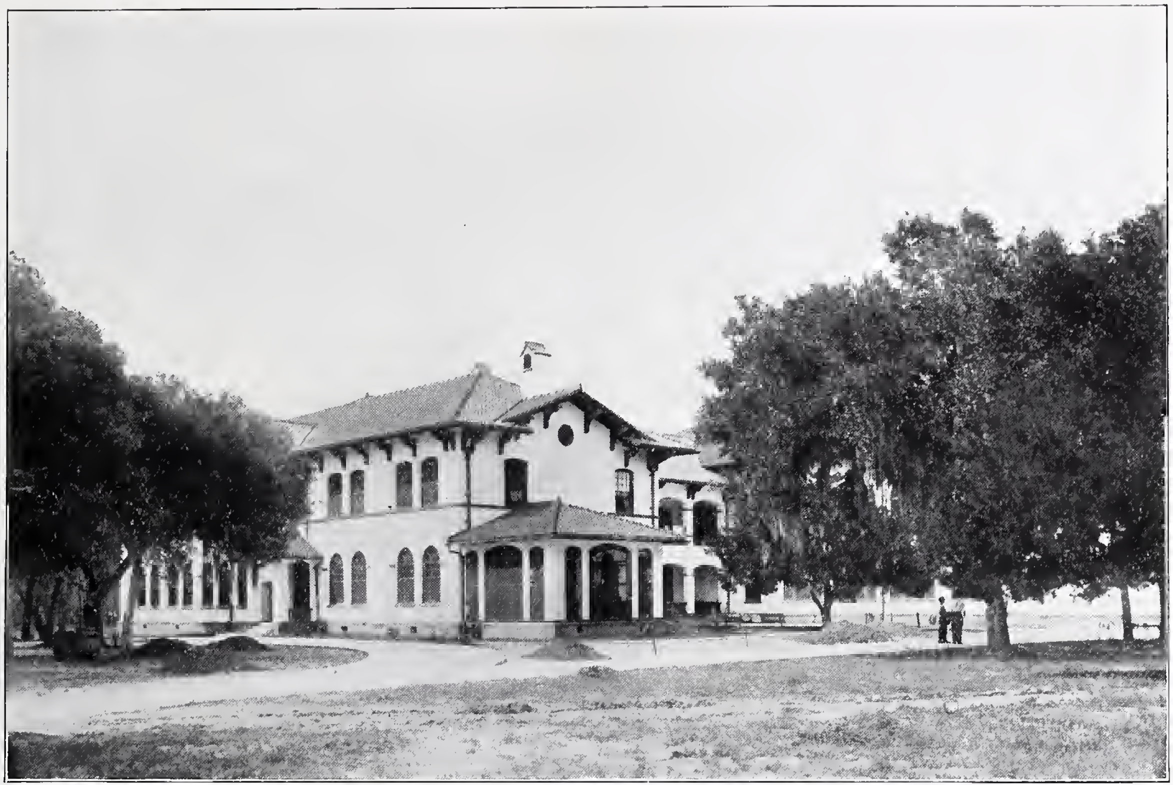
The control of the public schools of this state is vested in the county boards, who are accountable to the state board. The county superintendent of schools is the executive officer in the administration of the orders of each county board. The development and financing of the educational interests in the county are determined in a large measure by the character of the men who constitute these boards. The result has been that in some of the older and longer settled sections of the state, the educational interests are not on a par with similar interests in the more recently developed parts of Florida although this is not a fact of general application.

SCHOOL STATISTICS

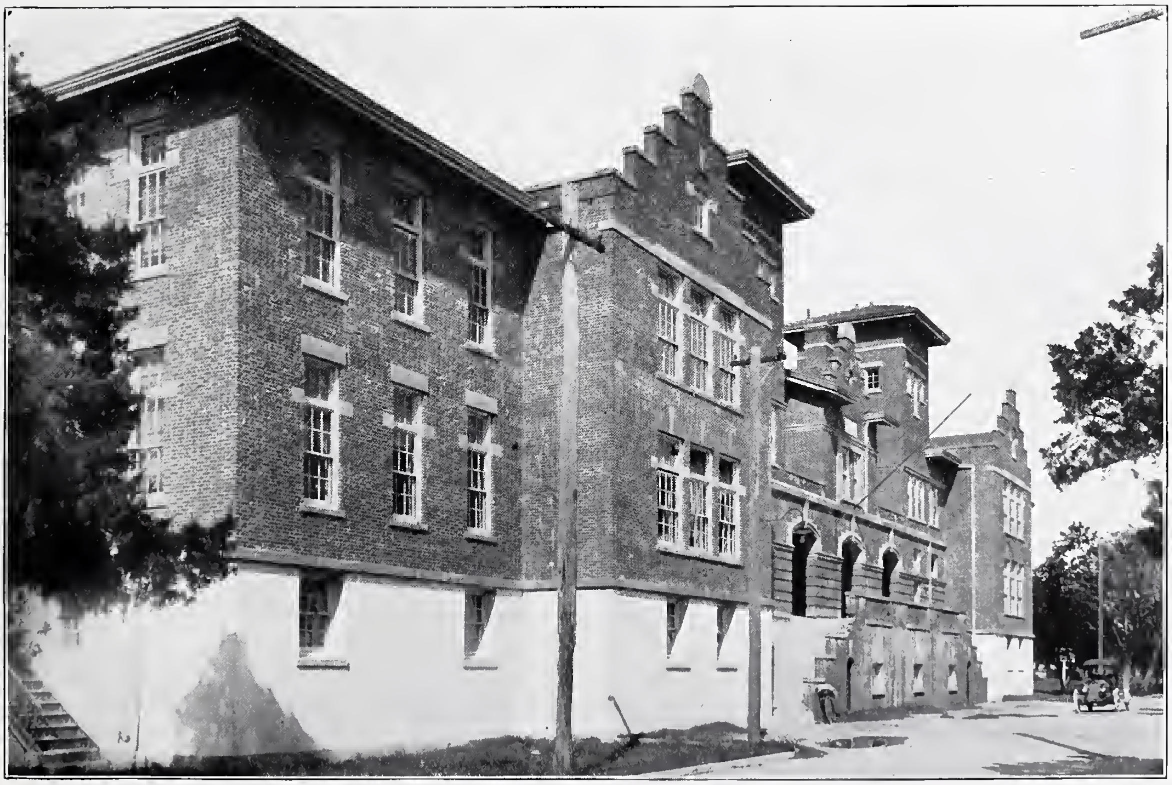
Referring to the recent report of the State Superintendent of Public Instruction, some important facts are gained regarding public school matters of the state.

Of the total population of the state by the census of 1910—751,139—the school population, including those between the ages of six and twenty-one years, was 211,530, of which 125,343 were white and 86,187 negroes. The expenditure of school funds was divided among 2,562 public schools, 1,848 for white pupils and 714 for negroes, for in the educational system of Florida the races are separated, virtually creating two distinct school systems although under one general management. The average length of the school year was 106 days, 110 in the white schools and 96 in those for negroes.

Of the entire school population, 148,089 pupils, or seventy-one



STATE DEAF AND BLIND SCHOOL, ST. AUGUSTINE



HIGH SCHOOL, ST. AUGUSTINE

percent, were enrolled, and according to races, seventy-eight percent of the whites and sixty-five percent of the negroes.

The value of public school property in this state was $2,036,684, of which $1,521,778 was for the white schools. The salaries of teachers required $1,109,968 and for new buildings $219,041 was expended.

The average monthly salary paid teachers was $52.16; to white male teachers, $68.13; to white female teachers, $55.80; to negro male teachers, $33.68; and to negro female teachers, $30.18.

RACE DISTINCTIONS

Such is a brief outline of the common school system of Florida as it exists today, free to all children of school age resident in this state. The apparent discrimination against children of the negro race in shorter school terms and smaller per capita expenditures for their education, demands but little explanation. Never in the history of Florida as a state has there been a denial of the right of every child, white or black, to the benefits of free schools. White property owners pay by far the largest proportion of taxes for all purposes, although it is not possible to determine with any degree of accuracy what that percentage is. Another fact aids in the explanation—comparatively few of the negro pupils advance in their schooling beyond the lower grades, which are less expensive in their administration than those of the grammar and higher schools in which the average white pupil completes his school education. For the few advanced negro pupils there are several seminaries in which their ambitions and capacities for attaining high scholarship may be satisfied.

The plan of the common school system of Florida contemplates a high school in every county and the necessary number of schools in every district as may be required by the school population. Every incorporated city in this state may become a distinct school district, and its educational affairs may be financed and controlled separately from those in the county outside of municipal limits.

HIGHER EDUCATIONAL INTERESTS

Outside of and distinct from its common schools, Florida has several institutions for special training and for the higher education of both races and sexes. These are: the Florida School for the Deaf and Blind, at St. Augustine; the Florida Agricultural and Mechanical College for Negroes, at Tallahassee; the Florida State College for Women, at Tallahassee, and the University of Florida, for the higher education of men, which is located at Gainesville. Coeducation is not favored in the colleges under state control. These colleges are supported in part by the income from special funds, but more largely by appropriations from the state treasury.

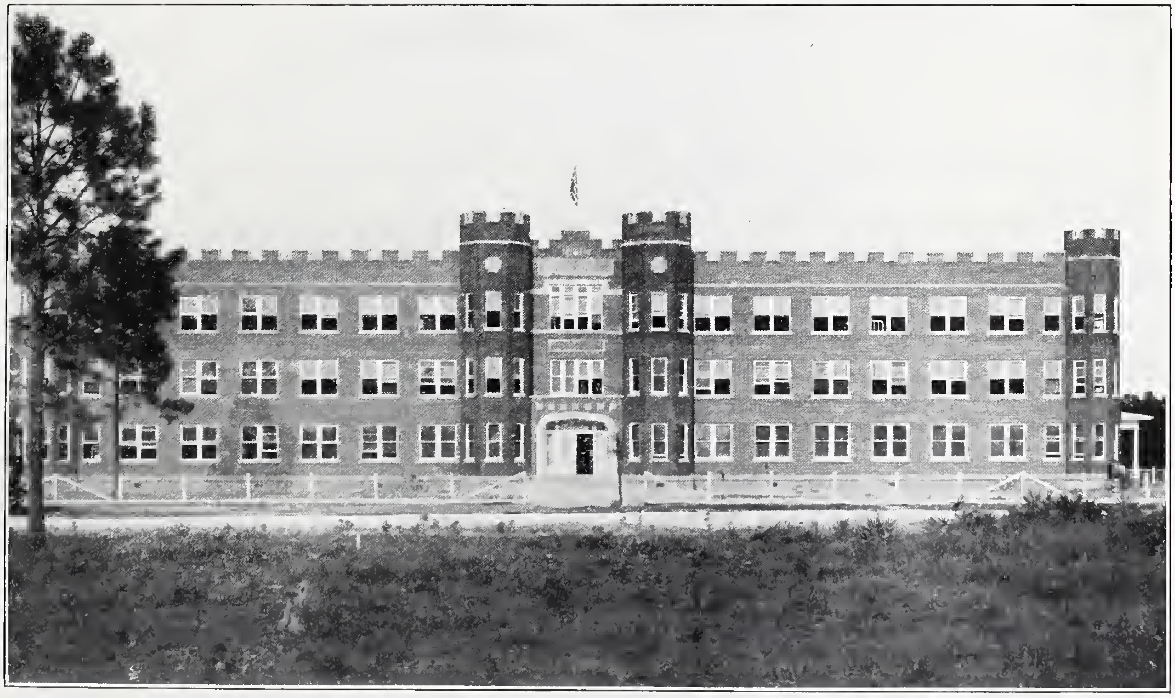
In the matter of higher education in Florida, it is only within recent years—in 1905—that the institutions devoted to the training of more advanced pupils were put on a sound and certain basis. When the State Legislature met in biennial session in that year nine separate institutions were receiving aid from the state. These colleges, in buildings and equipment, represented a money value not much above a half million of dollars. The curricula of several, perhaps of the majority of them, were no higher or better than those offered in many of the high schools of the state, and in fact, some of them actually took the places of high schools in the particular counties in which they were located. The appropriations asked for these schools amounted, in the aggregate, to more than three hundred thousand dollars each year, and the campaign for such appropriations by the Legislature had induced a vigorous rivalry among them which offered no advantage to the institutions nor to any of their pupils. These schools had become an increasing burden upon the state without a corresponding and growing benefit.

THE BUCKMAN BILL

It was in that year, 1905, that a bill was introduced before the Legislature providing for sweeping changes and reforms. It contemplated a more economical expenditure of funds for higher education divided among fewer institutions. It proposed to withdraw state aid from so many struggling institutions of learning having insufficient equipment, inferior courses of study and of local benefit and reputations, and to establish instead two splendid institutions of learning—a university for men and the college for women—both thoroughly equipped, with courses of study the highest and best, efficient faculties, and fitted to win wide-spread reputation. The bill was introduced by Hon. H. H. Buckman, from Duval county, and through all the strenuous debate that preceded its final adoption and in subsequent times, it was known as the Buckman bill.

This bill provided for the establishment of two colleges, one for each sex of the white race; one to be located east, and the other west of the Suwanee river. It proposed the appointment of a board which

BUCKMAN HALL, UNIVERSITY OF FLORIDA



FLORIDA MILITARY ACADEMY, JACKSONVILLE

should select the respective locations for these institutions, and in their selection, from which there could be no appeal, the board was required to take into consideration the value of buildings and equipments and all other advantages offered by each city in which were the institutions which it was proposed to replace. It provided for a board of control of five members, to which in conjunction with the State Board of Education, should be committed the creation and administration of affairs of the new colleges.

The Buckman bill provided in addition for the establishment on a new basis of a college for negroes already existing at Tallahassee and of the school for the deaf and blind at St. Augustine, to be administered by the same board of control. It provided for their removal to other locations if so determined by the board.

LOCATIONS OF STATE SCHOOLS

It was but natural that an energetic rivalry should arise to secure the location of these four institutions, among the cities which were anxious to retain schools already existing, even though it might be under new names and managements. This rivalry became almost bitter and aroused closest attention in every section of Florida, until the board finally selected Tallahassee as the location for the state college for women, where the Women's College had existed before it; it selected the same city for the Florida Agricultural and Mechanical College for Negroes, replacing the normal and industrial school. It established St. Augustine as the site of the school for the deaf and blind, and at Gainesville it located the University of Florida.

Many new and perplexing problems confronted the board of control at the outset of its undertaking to build up the new system of higher education. The courts were called upon to decide the constitutionality of the new law and they sustained it. Sufficient funds were not available to erect in the first year nor in the second, all the buildings required nor to equip them for their largest usefulness. They had to plan for a long future and to establish foundations that should last. Yet, within the first six years of their administration, the institutions and their equipment represented an investment of $2,000,000, and their standards of education had been placed on a par with the best in the country.

UNIVERSITY OF FLORIDA

The University of Florida at Gainesville has been organized in conformity with the recommendations of the Association of State Universities of America, of which it is a member. This plan gives consistent and systematic division to the various fields of work represented in the institution. Its organization includes the Graduate School; the College of Arts and Sciences, offering the degrees of Bachelor of Arts, Bachelor of Science, the Bachelor of Science in Education; the College of Agriculture, with the degree of Bachelor of Science in Agriculture; the College of Engineering, offering degrees in the branches of Civil, Electrical and Mechanical Engineering; the College of Law, with the degree of Bachelor of Laws; and the Sub-Collegiate Division, which affords a preparatory year to the collegiate course; the United States Agricultural Experiment Station, and, in addition, the University Extension, with Farmers' Institutes throughout the state, Correspondence Courses in Agriculture, and a Lecture Bureau.

Admission to the University may be had on a certificate of graduation from any first-grade high school in the state, also by the usual examinations.

THE EXPERIMENT STATION

Connected with the State University is the Experiment Station, which is maintained entirely for research work and is supported by liberal appropriation. It conducts an experimental farm of several hundred acres, stocked with an excellent herd of high grade cattle, and in its laboratories have been worked out problems that have saved hundreds of thousands of dollars to the farmers of Florida.

The campus of the University, comprising many acres of forest covered land, has been laid out in attractive form by skilled landscape engineers, allowing room for the location of new buildings and departments as funds shall be available for their construction. Already seven splendid buildings have been placed on these grounds, besides the numerous structures required for the work of the Experiment Station.

WOMEN'S COLLEGE

The Florida State College for Women at Tallahassee divides its work into various schools or departments, each offering appropriate degrees at graduation. These are: the College of Arts and Sciences;

the Normal Department; the Schools of Art, Music and Expression; and the Department of Home Economics. Three handsome buildings house the work of the college, which occupies a beautiful tract of many acres, surmounting one of the hills on which Tallahassee is built.

FOR THE DEAF AND BLIND

The Florida School for the Deaf and Blind, at St. Augustine, is an institution designed strictly for purposes of education and is not an asylum for the unfortunate or a hospital for the treatment of diseases. The purpose of this school is to offer, through proper methods of instruction, a thorough and well-balanced course of education to the deaf and blind youth of this state. The statutes of Florida provide that it shall be open free to the deaf and blind children whose parents are unable to defray any of the expenses, residents of this state, and of suitable age and mental capacity to receive instruction by the methods pursued. To children whose parents are able to pay, a charge of $12.50 per month for eight months of school is made. No child of unsound mind is received.

Instruction is in the ordinary branches by methods suited to each individual case, and an industrial department gives those whose infirmities do not make it impossible, useful training in some mechanical art. An excellent moral atmosphere prevails and it is sought to form character as well as to train the mind along right lines.

A department for negro children is maintained entirely separate from that in which white boys and girls are housed and taught. The annual expense for maintenance at present is not far from $20,000, provided from state funds. More than one hundred children were attendant upon the institution during the school year of 1912-1913. Of these the white children included forty-six deaf and thirty-one blind; of negroes, twenty deaf and eight blind. The institution is doing a splendid work and is aiding in the solution of difficult problems for many Florida families in moderate or reduced financial circumstances.

COLLEGE FOR NEGROES

The Florida Agricultural and Mechanical College for Negroes at Tallahassee provides for the education of the colored race. While its departments and curriculum are not in all respects as comprehensive as those of the colleges for white students, they have been so arranged as to admit of an indefinite expansion as future developments may demand. They are entirely sufficient to meet all demands that have been made. Manual training and housekeeping economics are features of the instruction. The annual expenditure for the operation of the college at present approximates $26,000. The income is provided from the Morrill Fund, from the State Educational Fund and from smaller incidental sources. The attendance for the school year closing with July 1, 1913, exceeded three hundred; and the number was limited only by the available dormitory and equipment facilities.

DENOMINATIONAL COLLEGES

Entirely outside of and distinct from the state school system are a number of ably managed colleges, which are accomplishing excellent results. Several of them, under denominational supervision, are among the finest and most completely equipped in the south. Among these are: the John B. Stetson University at De Land; Rollins College at Winter Park; Columbia College (Baptist) at Lake City; the Sutherland College (Methodist) at Sutherland; Hargrove Institute at Key West; Palmer College (Presbyterian) at De Funiak Springs; the Florida Military Academy at Jacksonville; St. Leo College (Catholic) at San Antonio, besides a large number of good schools under Catholic management at St. Augustine, Jacksonville, Tampa, Pensacola and other of the more important cities. Several normal schools of high standard are maintained in widely separate parts of the state.

Florida, now in the sixty-eighth year of its statehood and with less than forty years of uninterrupted industrial development in its history, has established a system of public schools of which it has reason to be proud. To its advancement and future upbuilding the state has called its best citizens, and an increasingly earnest public sentiment is supporting every movement for its greater efficiency.

CHAPTER XX

FLORIDA CITIES

FLORIDA, according to the latest decennial enumeration by the Federal Government, has twenty-eight cities with a population of two thousand or more. Without an exception, their increase in numbers of permanent residents and in progress from the showing of the previous census, would have been phenomenal in any state or section which had prospered in a less degree than Florida. Their growth has been but a reflection or a part of the remarkable increases of this state as a whole. Florida and her cities have kept even pace in their development.

Two-thirds of Florida's population is rural and as development of agricultural interests has advanced, the cities have grown in size and importance.

The cities of Florida having a population of more than five thousand are ten in number; those with a population of more than four thousand are twelve; those with three thousand and more number twenty-one, and those having more than two thousand are twenty-eight in number. The ten largest cities with their populations are:

Jacksonville	57,699
Tampa	38,524
Pensacola	22,982
Key West	19,945
West Tampa	8,258
Gainesville	6,183
St. Augustine	5,494
Miami	5,471
Lake City	5,032
Tallahassee	5,018

Those with a population of two thousand or more are the following:

Appalachicola	3,065
Bartow	2,662

Daytona	3,082
De Funiak Springs	2,017
De Land	2,812
Fernandina	3,482
Fort Myers	2,463
Kissimmee	2,157
Lakeland	3,719
Live Oak	3,450
Ocala	4,370
Orlando	3,894
Palatka	3,779
Plant City	2,481
Quincy	3,204
Sanford	3,570
St. Petersburg	4,127
Tarpon Springs	2,212

It is a matter of regret that the lack of space prevents the use of the stories of all the enterprising municipalities in the state. A few of these have been selected for special description, not because they are more noteworthy than those that have been necessarily omitted, but they may be of interest as typical of the spirit of advance and enterprise that have made all of them prosperous communities.

CHAPTER XXI

JACKSONVILLE

JACKSONVILLE'S history is that of a frontier settlement, developing slowly at first and through many years into a trading post and distributing center; then more rapidly into a town of growing commercial importance as the value of its water transportation and its advantageous location were realized, and in later years into one of the great cities of the south, with a future quite as promising as any in the southland.

Its location has been strategic from the beginning and in every decade of its growth. On the banks of the St. Johns river at its narrowest place for seventy-five miles from the ocean, the Indians called it Wacca Pilatka, the place for swimming cattle across the stream, and the English equivalent was Cow Ford. The name remained until 1832, when the town of Jacksonville was formed under an act of the Territorial Legislature of Florida and the place was re-christened in honor of Gen. Andrew Jackson, who had been the first Governor of the territory after it had come under control of the United States. It was the crossing place of the King's Highway which connected Pensacola and St. Augustine, the capitals of the two Floridas, West and East, as the territory had been divided by the English.

The choice of location along the river was the nearest to the ocean whereon a city might be builded, for topographical conditions would prevent the existence of a great commercial center between the present Jacksonville and the Atlantic, without the expenditure of many millions for filling and dredging low lands.

HISTORIC SURROUNDINGS

Within a few miles of this city, on St. Johns bluff, was erected at Fort Caroline, the first habitation for the uses of the white race on the American Continent, and on the brow of the same hill was fought the first battle for religious freedom and the first blood of martyrdom was shed, when Menendez led his attack against the French Huguenots, fifty-five years before the Pilgrims landed on Plymouth Rock.

When Civil war raged between the north and the south, the St. Johns river was the avenue and Jacksonville the gateway by which Federal troops entered Florida in the vain attempt to force the state back into the Union. And this city is and must always be the gateway both by water and rail to the largest section of eastern, middle and northern Florida.

In all its growth Jacksonville has increased in population and wealth as the state has increased. When prosperity, or its opposite, has come to any section of Florida, it has found its quickest reflection in Jacksonville. When disaster has overtaken this metropolis, it has been felt in every city and hamlet in the state, even as the weakened heart beat is shown in the slower and feebler pulse. For Jacksonville is essentially the heart center of Florida's material development. It is the commercial capital of the great peninsular state.

FLORIDA'S DEVELOPMENT

And this state, this land where European civilization first touched American soil early in the sixteenth century—what is it? Through four hundred years it has been the scene of massacre and slaughter. Spanish, English and French fought with the Indian tribes and with each other for its possession, and from the four centuries less than seventy years has been spared from wars and strife for the systematic development of its resources. Wars of aggrandizement and of conquest, of massacre and horrible slaughter, of civil strife and savage butchery have stained its soil with the blood of pioneers and martyrs and heroes. It was the first land on the continent to be opened to Caucasian settlement; it is one of the last to be developed by the arts of peace. And no state in all the Union has a more brilliant promise for the future, none has responded more quickly to the touch of industrial undertaking.

JACKSONVILLE'S DISASTERS

Disasters have come to Jacksonville, her full share of them, as the years have rolled by. Five hundred of her citizens fell victims to an epidemic of yellow fever in 1888. Death took ten percent of those

GLIMPSE OF JACKSONVILLE'S WATER FRONT AND SKYLINE

VIEW OF JACKSONVILLE UPPER HARBOR AND SUBURB SOUTH JACKSONVILLE

HARBOR ENTRANCE—JACKSONVILLE
North Jetty—1½ miles long

LUMBER SHIPPING, JACKSONVILLE

stricken with the disease. Those who were spared closed up the ranks and marched on to greater things.

The "Great Freeze" of December, 1894, destroyed the citrus groves of middle and north Florida and took from Jacksonville its distinction as the greatest orange market in the world. It paralyzed for a time the industries of the state and the future looked dark and gloomy, but the result has been a diversification of agricultural effort and the development of other resources which have but added to the prosperity of the city and state.

But the crowning financial disaster of Jacksonville's existence was crowded into a few hours, between noon and dark of May 3, 1901. During that eventful afternoon one of the great conflagrations of the world's history swept over more than a square mile of the city's busiest and most valuable section; it destroyed twenty-six hundred buildings, residence and business, and the loss was more than fifteen million dollars. Ten thousand people were homeless, public utilities were useless, and some there were on that gloomy May night who wondered if Jacksonville could or would survive the blow. But those who doubted were casual visitors, they knew not the courage of its people.

And the men and women who have made Jacksonville what it is, benumbed by the magnitude of the disaster, rested that night. The day that followed found them inspired with new courage, and it was on that fourth day of May that the new and greater Jacksonville was started from its baptism of flame on its career of advance that has known not a moment of ceasing or rest to the present, and the advance of today is at a rate more rapid than ever before.

BUILDING RECORDS

It is interesting to note some of the particulars of that growth in the twelve and more years of building, or rebuilding, of the operations within the city limits that have not been extended since 1889. In the period between the fire and January 1, 1913, permits were issued for new buildings and reconstruction to the number of 13,059, an average for the entire period of eleven and a half years of 3.6 for every working day. The total cost of these improvements was $35,896,898, an average daily expenditure for the entire period of $9,837.50.

In the two or three years immediately following the fire, many buildings were constructed more or less hurriedly to meet emergencies created by the disaster. The records of the last five years show a steady increase in building operations, as appears in the following tabulation:

Year.	Number Building Permits.	Estimated Total Cost.	Average Daily Expenditure.
1908	819	$2,075,500	$ 6,631
1909	1,058	2,310,025	7,380
1910	1,268	3,184,940	10,176
1911	1,343	3,589,805	11,469
1912	1,145	3,807,957	12,166

The average cost of these buildings and their increasing value are also worthy of notice. When it is recalled that of the more than thirteen thousand buildings erected within the period under consideration, the larger part was of wood construction, including the cheapest houses in the outskirts of the city, it will be seen that the average is high. This value in 1908, was $2,532; in 1909 it was $2,183; in 1910, $2,512; in 1911, $2,674; and in 1912, $3,317. From this it is apparent that the buildings are of a continually bettering class and more substantial.

VALUE OF CONSTRUCTION

The cost of buildings under construction on April 1, 1913, was above two and a half million dollars, and basing the operations for that year on the operations of the first four months, for which only the figures are available at this writing, it is probable that they will exceed four million dollars during the year.

It must be remembered that the construction values and figures already outlined, are included within the actual limits of the city, which as noted before, have not been extended for twenty-four years. The changes wrought by the reconstruction and expanding of the city have built up large residence areas outside these old boundaries. The dividing lines between the city and its suburbs are distinguishable only on the official maps, but they are the limits of municipal jurisdiction. Hundreds of beautiful and expensive homes have been erected in these suburbs and should be included in the Greater Jacksonville of today. There are no official records to determine their numbers or cost. Reliable authorities, backed by known facts, estimate their value from one-quarter to one-third of the work done inside the city. Accepting the latter fraction as wholly within the probabilities, the value of building operations within the Greater Jackson-

GOVERNMENT LIGHTHOUSE AT MAYPORT AT MOUTH OF ST. JOHN'S RIVER

ENTRANCE TO PUBLIC LIBRARY, JACKSONVILLE

ville for the past twelve years has been between $48,000,000 and $50,000,000. And in leaving this subject, it is necessary only to mention the fact that the upbuilding of the city and its surroundings is progressing at a rate more rapid than ever before.

CHANGING POPULATION

Jacksonville's population has been counted a good many times, often by her own interested citizens and by state authority, but that no charge of bias may be made, the figures of the United States Census Bureau are given for the last three decades, all of them covering the same geographical territory that is now included within the city limits:

Year.	Population.	Percentage of Increase.
1890	17,201	——
1900	28,429	65.3
1910	57,699	102.5

The increase for the first decade of the present century covered the period of the great fire. This growth is all the more remarkable when compared with that of other cities in the same ten-year period, in which surrounding territory made possible a large portion of the splendid showings that were recorded. Birmingham, Alabama, with an increase of nearly 500 per cent in population, enlarged its territorial area from seven square miles to forty-nine. Atlanta, Georgia, doubled its area to secure less than a doubling of its population.

Farther study shows that the increase in Jacksonville's population in the last census decade was not uniformly distributed over the entire ten years, but that a little more than sixty-five percent of it came between 1905 and 1910. The ratio of growth is constantly increasing and every indication serves to prove that it is more substantial at the present time than ever before. Estimating according to the rules adopted by United States census authorities, Jacksonville's population within the city limits on April 1, 1913, was approximately seventy thousand permanent residents.

The city directory for the current year, whose compilation covered the period to March 1, and which included the names of city and suburban residents, or of the Greater Jacksonville, contained 34,580 names. This multiplied by two and one-half, the rule applied by United States authorities, gives 86,450 as the number of citizens resident in Florida's metropolis. The present ratio of increase will give the Greater Jacksonville 160,000 in 1920.

REBUILDING OF JACKSONVILLE

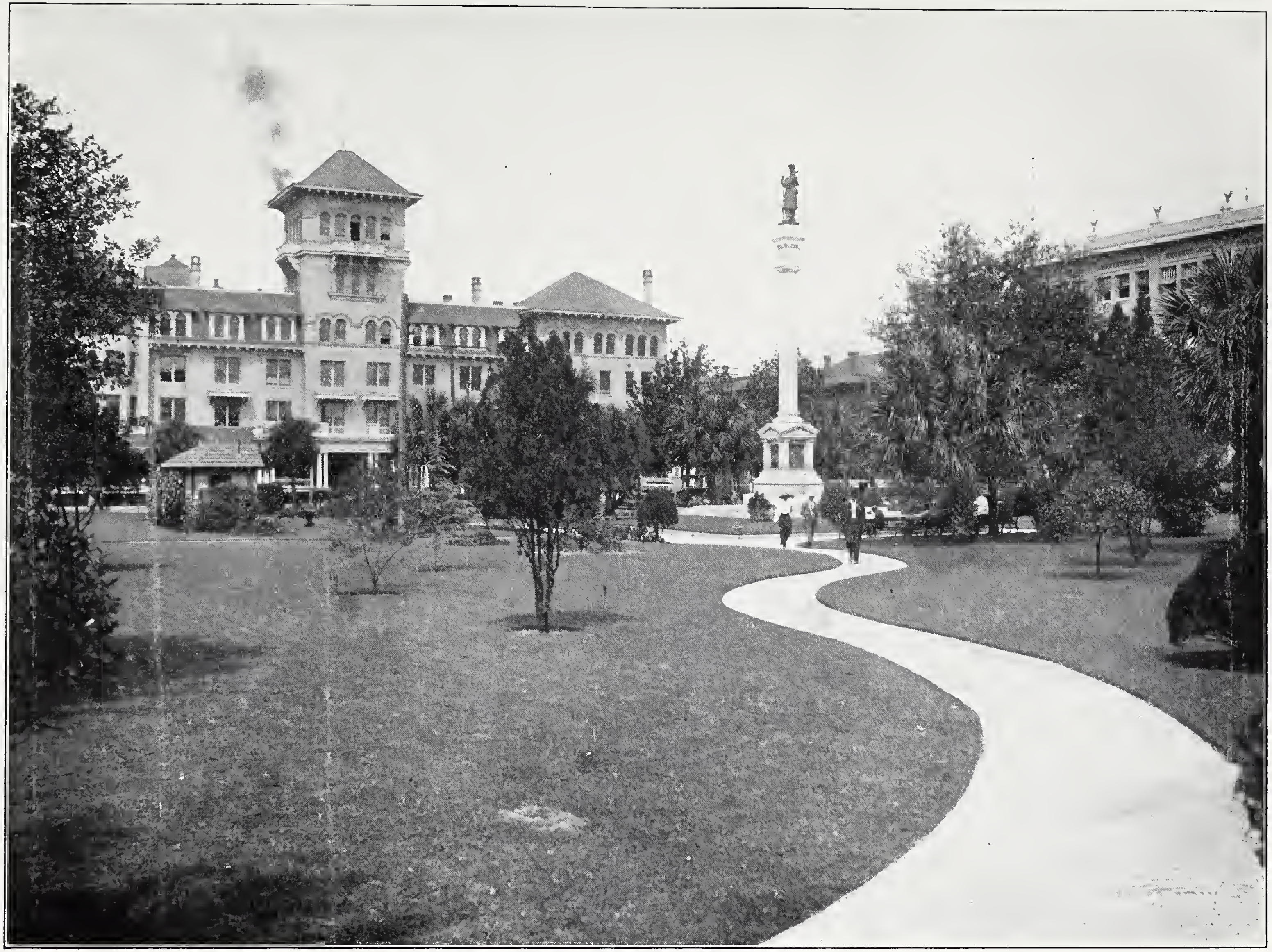
The rebuilding and remodeling of the Greater Jacksonville have changed and expanded the city almost beyond the remembrance of the final decade of the last century. Few, even of the most far-sighted, on that night of May 3, 1901, when the city was melting down before the flames, could have pictured a more beautiful and a greater city rising from the ashes in less than fifty years. But the dozen years that have gone, have more than justified the most ambitious hopes that could have been cherished at that time.

One of the city's most attractive adornments was the magnificent trees that lined her avenues and streets before the fire. Great oaks and magnolias and palms that had grown to maturity through fifty years, were shriveled and withered. Only their blackened trunks remained. Outside the fire limits of that time, the splendid rows of oaks that arch above many of the streets today, suggest the scenic beauty that covered the entire city before. But to replace these losses civic authorities and private citizens have set new trees and time will complete the restoration of past glory.

The rebuilding of the residence sections has tended largely towards suburban occupation, where more spacious grounds and ample surroundings make possible greater elegance and comfort. These homes have been built as substantially as would be required for the rigors of a northern climate, many of them of brick or stone or concrete. Every modern conveniece has been installed and the landscape artist has utilized Florida's semitropical trees and foliage to give them appropriate setting. Jacksonville is a city of homes far above the average in their architectural attractiveness and quite in keeping with the prosperity of their owners and of the city itself.

BUSINESS EXPANSION

The growth of the business sections has occupied many blocks which before 1901 were the sites of the fine residences of the earlier Jacksonville. The shopping district extended originally along a few blocks on Bay street, parallel to the river and one block from it. The erection of the postoffice and Federal building one block farther from the river, on Forsyth street, was followed by many of the banking and large



HEMMING PARK AND CONFEDERATE MONUMENT

commercial interests, and eventually made that thoroughfare the Wall street of Jacksonville and of Florida, the center of their most important financial developments.

Later expansion has extended the retail district several blocks farther from the river and it has gathered about what is called the St. James building, an immense mercantile and business structure which occupies the entire city block of the famous old St. James Hotel, the destination of tourists from all parts of the world, before its destruction in 1901. This has established, not a new business center, but a wide expansion of the older, and the blocks between are filling rapidly with mercantile and office buildings.

EXPANDING VALUES

The legitimate increases in values of Jacksonville real estate since the fire of 1901, have seemed phenomenal. If they have appeared unwarranted, it was because the remarkable permanent growth of the city has been lost sight of. At times they have suggested the tales of boom towns in the west which ended in disaster. The development of Jacksonville has been upon the actual foundation of present intrinsic worth and of future and speedy appreciation. Seemingly exorbitant values for central business property have been justified by actual returns from the property when improved with office buildings or stores or warehouses. Increasing population has created new businesses and enlarged old establishments. New enterprises have come with astonishing rapidity demanding accommodations. The growing importance of the city as a distributing center has added to the demand. At the present rate of increase, the office business of Jacksonville alone justifies the erection of one new ten to twelve-story building each year with accommodations for one hundred to one hundred and twenty-five firms or individual occupants. This is in addition to the demands for manufacture and warehouse facilities outside the down-town business sections.

JACKSONVILLE BANKS

The banks of Jacksonville have recorded its growth through the years as faithfully as the delicate instruments of the Weather Bureau have told the story of the temperatures, the rainfall and the winds. They have by their wise conservation exercised a restraining influence on speculative tendencies which the remarkable growth of the city and state might have fostered. They have encouraged development and they have done much to guide it along safe and conservative lines.

The Jacksonville Clearing House Association includes in its membership ten strong institutions, five of them national banks and five operated under charters from the state. There is also one bank owned largely and operated by negro capital, which is doing a safe and increasing business. These institutions are housed in substantial quarters, some of them elegant in their appointments, and in this respect they are not surpassed by any banking houses outside the largest financial centers in the country.

The commercial growth of the city is at least suggested by the records of the Clearing House during the past fourteen years:

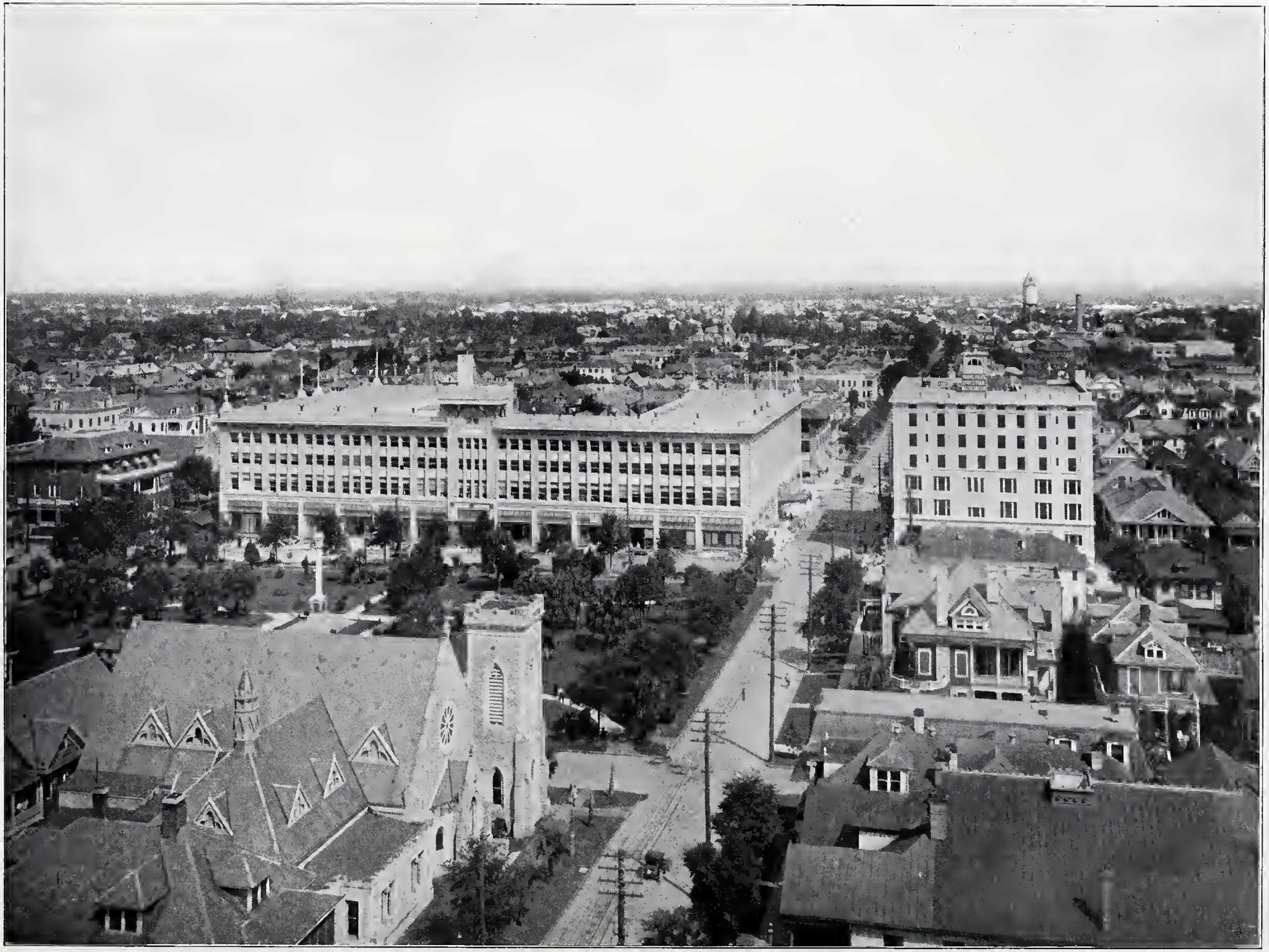
Year.	Total Clearings.	Percentages of Increase.
1899	$ 12,642,953	—
1900	12,733,048	.007
1901	16,757,772	31.6
1902	18,937,304	13.
1903	26,112,716	37.6
1904	43,265,462	65.6
1905	* 60,000,000	38.6
1906	66,684,098	11.
1907	76,046,049	14.1
1908	73,194,128	**—4.
1909	92,228,527	26.
1910	124,657,072	35.1
1911	146,740,819	17.7
1912	168,442,389	14.8

The increase in the total of the clearings of 1912 over those of 1899, was $155,799,436, or 1,232 percent. In only three months of 1912 did the total clearings fail to exceed those of the entire year of 1899. Comparing the clearings of 1912 with those of 1902, a period of ten years, the increase was $149,505,085, or approximately 790 percent.

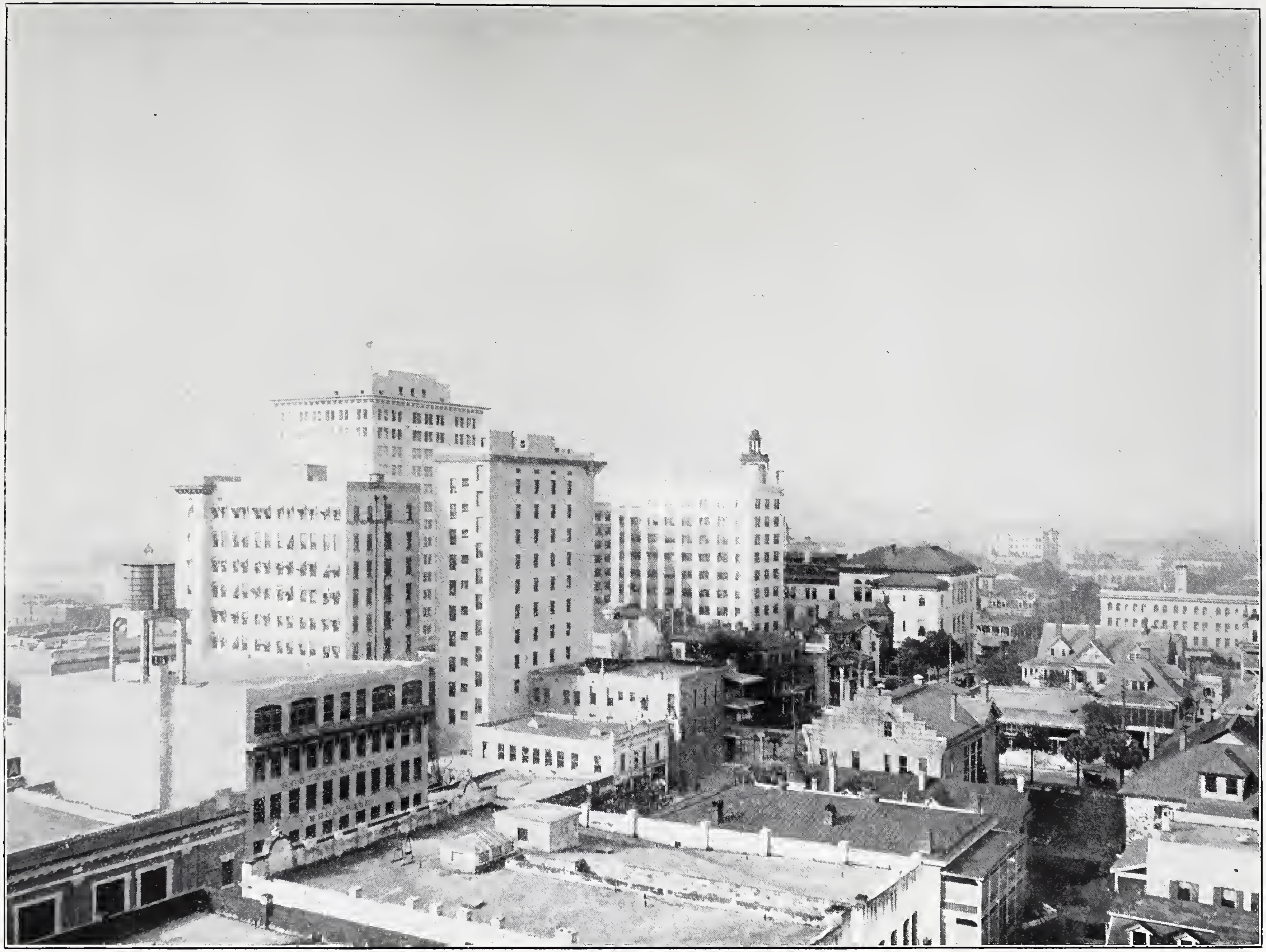
The conditions of Jacksonville's banks on the first of July, 1913, showed aggregate capital, surplus and undivided profits exceeding five and a half million dollars, deposits of about twenty-five millions and total resources in excess of thirty millions.

* Approximate; exact figures not obtainable.

** Decrease as result of panicky conditions throughout the country.



VIEW OF JACKSONVILLE'S NEW BUSINESS DISTRICT



BUSINESS CENTER—JACKSONVILLE

JACKSONVILLE'S TRANSPORTATION FACILITIES

Jacksonville's greatest asset, her largest promise of future and permanent commercial importance is in the splendid water course that flows past her doors. It marks her municipal limits on the south and east. Seven miles of deep water front lie within four miles of her business center. The St. Johns river connects the city by deep water navigation with the Atlantic highways, twenty-seven miles away, and a line of steam passenger and freight vessels plies as far up the river as Sanford, 150 miles distant. Lighter draft boats go as far as Lake Washington, nearly three hundred miles south.

The greatest commercial centers of the world, with few, if any, exceptions, are located on deep water. Jacksonville possesses and is rapidly developing most of the natural advantages that have made commercially great the ports of New York, Philadelphia, Baltimore, New Orleans and Galveston on this side of the ocean, and London, Liverpool and Hamburg on the other side.

The development of the port of Jacksonville from a frontier settlement stretching along a sluggish stream, to a metropolitan city handling every year a deep water commerce worth millions of dollars over a splendidly charted and buoyed channel, is a story of more than passing interest. This development has made possible the establishment here of lumber mills cutting a million feet a day; it has made Jacksonville the third largest manufacturing place of fertilizers in the country and the greatest depot for fertilizer material in the world; it has made this city the commercial capital of Florida and of southern Georgia by securing the lowest transportation rates from and to the world's markets; it has helped to make the city the greatest center of naval stores operations, and the shipping point for 360,000,000 feet of lumber and 125,000 tons of phosphate rock in 1912.

Making connections here with this water transportation are five great rail trunk lines, with an aggregate mileage of sixteen thousand miles, and these lines have spent here within the past few years more than three million dollars for terminal and warehouse facilities. The vessels carrying this water commerce in 1912 numbered more than thirty-four hundred with a total tonnage of almost three million, nine hundred thousand tons.

BUILDING OF THE PORT OF JACKSONVILLE

To make possible this enormous traffic with the certainty of its enormous expansion, has involved the expenditure of approximately six million dollars of appropriations by the Federal Congress through the last twenty years. Originally the St. Johns river had a depth of only nine or ten feet over its bar at high tide with a constantly shifting channel. The construction of a system of jetties at the mouth, dredging and building retaining walls to scour the channel have given a depth of twenty-four feet at low tide, and twenty-nine feet at high tide from the city's wharves to the Atlantic. Under the direction of United States engineers operations now going forward financed by Government appropriation, will increase these depths to thirty and thirty-five feet, respectively, by the close of the year 1914.

This means that Jacksonville is the only port south of Norfolk on the Atlantic seaboard, where according to existing plans which have the endorsement of the United States Government, the largest ships will be able to enter and leave at any stage of the tides. It has already the distinction of being the most southerly port on the east coast of the United States where deep draught vessels can now take both cargo and fuel.

This development of the port has been made possible only by the consistent and persistent efforts of Jacksonville's business men and organizations, urging upon Congress the importance of such development to the commercial interests not alone of the great southeast, but of the nation itself.

Three lines of coastwise steamships connect Jacksonville with the great cities and markets on the Atlantic seaboard by eight to ten sailings a week. They afford the most favorable freight rates north and south. Regularly established lines of freight steamers give eight to ten sailings each month to and from Hamburg, Rotterdam, Bremen, Liverpool and other European ports. Besides these, numerous tramp steamers and sailing vessels are constantly entering and clearing for all parts of the world, adding largely to the totals of tonnage.

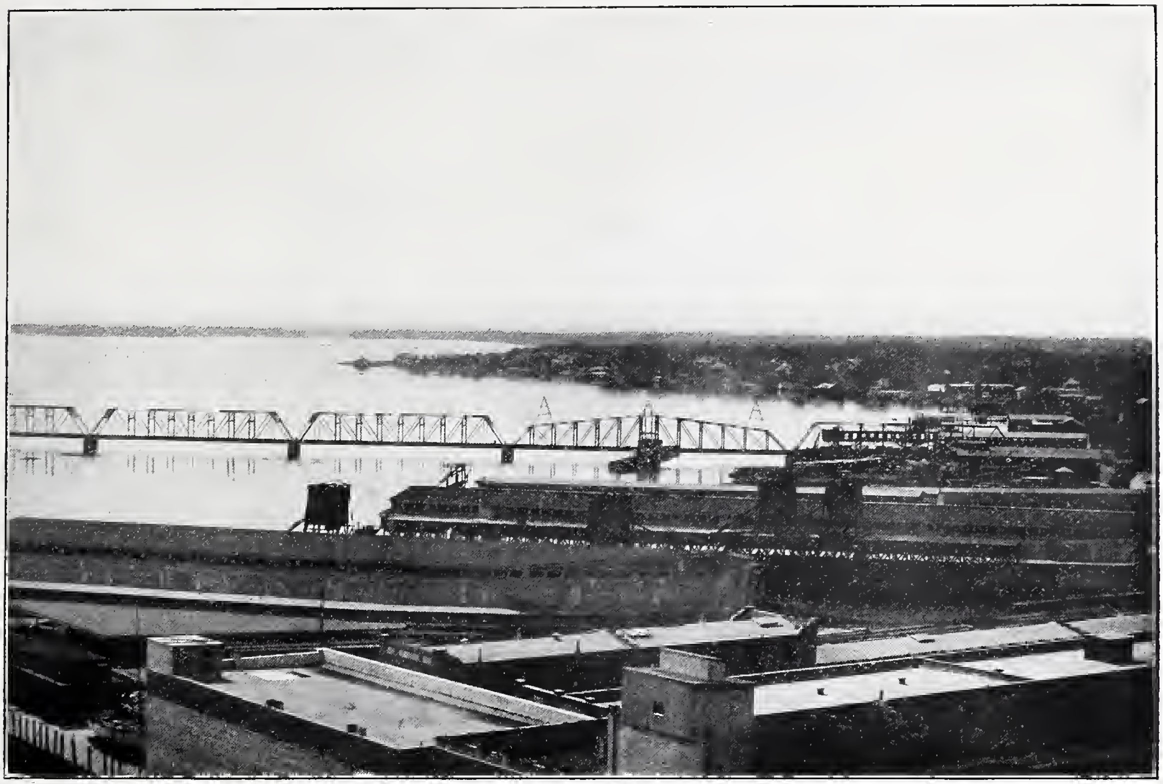
THE SOCIAL SIDE

Jacksonville's social side is in keeping with her commercial development. Ninety churches, a good school system, richly appointed clubhouses and theaters, splendidly paved streets and avenues, parks and playgrounds, successful ownership of municipal waterworks system and electric lighting and power plant, well stocked stores and shops and all the conveniences that belong to twentieth century living are here.

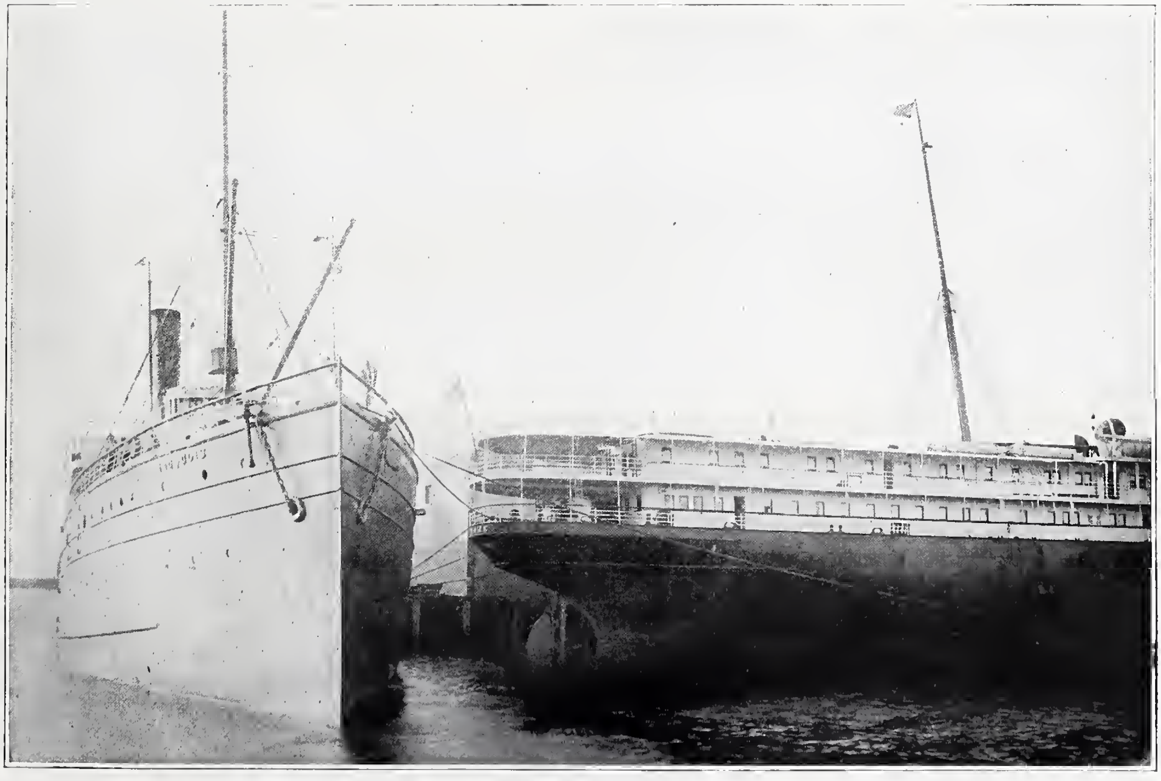
One of the city's chief assets is a splendidly efficient fire depart-

RESIDENCE DISTRICT, RIVERSIDE AVENUE, JACKSONVILLE

RIVERSIDE PARK, ONE OF JACKSONVILLE'S FINEST PLAYGROUNDS



VIEW UP THE ST. JOHNS RIVER, SHOWING RAILROAD BRIDGE



CLYDE LINERS TO NEW YORK AT WHARVES IN JACKSONVILLE

ment, equipped with the latest improvements in motor-moved apparatus and manned by a thoroughly disciplined force of fire fighters. The effectiveness of this department is measured by a smaller annual fire loss than is credited to any other city of its size in the country, and it is recognized by the granting of extremely low insurance rates.

An energetic department of public health has reduced the annual death rate within the past three years by nearly twenty per cent, and the reports of the last municipal year showed a death rate among the residents of Jacksonville of 14.8 for each one thousand of the permanent population. The rate for the white population was lower than this, or 14.1, making it one of the most desirable cities in the entire country from the sanitary viewpoint.

No city, north or south, has a more attractive present nor a more brilliant promise for the future.

CHAPTER XXII

TAMPA

BY JAMES E. MEARS, ASSISTANT SECRETARY, TAMPA BOARD OF TRADE

IT is doubtful if a dreamer like Hernando De Soto, when he set sail from Tampa Bay in 1539, fancied that he was taking farewell of a section that some day in the distant future would be so rich that the gold taken from the Indians by Cortez would be insignificant in comparison; that centuries later the descendants of pioneers from Castile, from Aragon and France and England, following the course of least resistance would build upon these shores a mighty city rivaling Carthage of old; that where then were virgin forests known only to the red men, would some day be fields of vegetables and groves of golden fruit ample to feed the people of his beloved Spain.

From the departure of De Soto, to 1825, when the United States Government established Fort Brooke—named for a gallant Virginian soldier—as a protection against the Indians, who then were numerous and hostile to the whites in southern Florida, the history of Tampa—an Indian name interpreted as "split wood for quick fires"—is inconsequential. The Government in 1847 gave forty acres of land to Hillsborough county as a town site and this marked the beginning of the city, which remained an unimportant village for a generation.

Fort Brooke was taken by the Confederate forces early in the Civil war and was held by them until its close, when it was once more occupied by two companies of Federal troops, which remained until 1882. During the Spanish-American war Tampa, because of its proximity to Spanish possessions in this hemisphere, was the chief port of embarkation to Cuba, and for nearly a year a large part of the United States army was mobilized here.

TAMPA'S RESOURCES

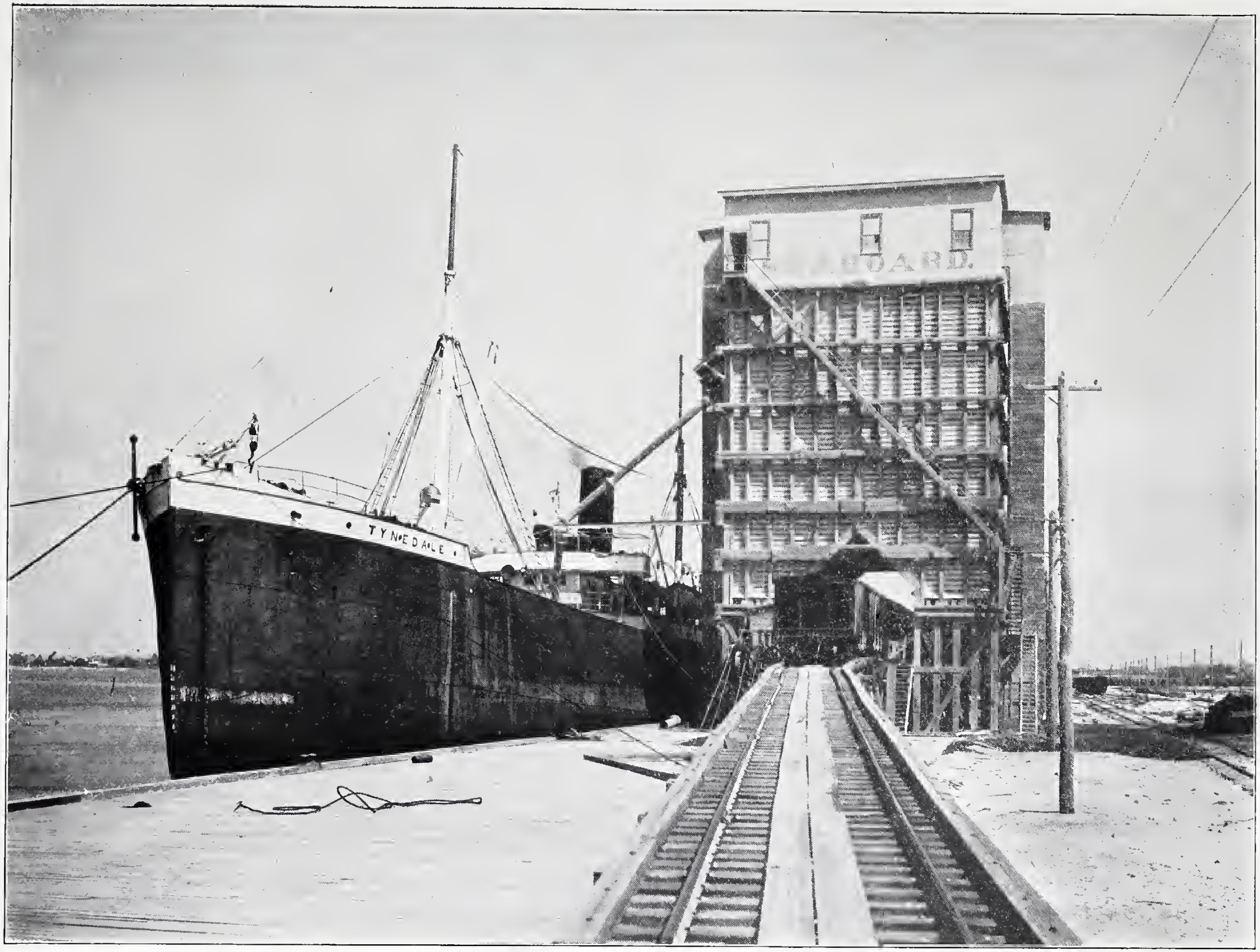
It was in the early nineties when Tampa opened its eyes to its own wonderful resources and possibilities, put aside its swaddling clothes and began the march of progress that leads to greatness. The advertising that the section received from the newspaper correspondents and the army men quartered here during the Spanish-American war, spread the knowledge of the city to every part of the United States. It acquainted the people of the whole country with the wonderful climate, the long growing seasons and the natural resources of the section. Tourists, homeseekers and investors followed quickly in the trail of the army, to see for themselves the remarkable country of which they had heard such glowing descriptions, many of which they imagined were the tales of some Munchausen. Delight, not disappointment, was their reward. They found what had been told them, a good harbor, a delightful all-year climate, which makes the young happy and the old young; standing timber sufficient to supply the country with yellow pine and turpentine for several generations; lands capable of producing enormous yields of citrus fruits and almost every other crop that has its home in the temperate zone; and enough phosphate to make fertile the world for ages.

Floridians joined hands with the men from the north and west and other parts of the south, as in Revolutionary days, and worked in harmony to build a great city, where it would be a joy to live and work and grow old. Strong men have continued to pour in until Tampa is now the most important port on the west coast of Florida and already it takes front rank among the cities on the gulf.

POPULATION AND GROWTH

Tampa's population in 1890 was 5,532, and the 1910 census showed 38,524, an increase in the twenty years of 596 percent. Not included in these figures were the people of the suburbs and of West Tampa, a distinct municipality separated from the parent city only by an imaginary line. The population of these in 1910 added to the residents of Tampa, would increase the total to 53,000. The percentage of negroes, who are utilized for common labor, is smaller than in most southern cities. The foreign population, an industrious, peaceable and law-abiding element which directly and indirectly has aided materially in the development of the city, is mainly from the Latin countries. A population drawn from every section of the United States and from foreign countries makes for a tolerance of all manner of religious and political views, and this is true in Tampa.

Local pride supported by evidence, is a reason for proclaiming that Tampa is one of the best cities in the south in which to live. It



PHOSPHATE SHIPPING, TAMPA

is a city of health—the annual death rate is but 8.5 for each one thousand of the resident inhabitants. It is a city of sunshine, flowers, education, refinement, culture, religion, hospitality, homes, clubs, theaters and all other luxuries and conveniences that are found in every modern, progressive city today. The thermometer seldom registers above 92° in the middle of the day, and the maximum, 96°, has been reached but four times since the establishment of the United States Weather Bureau here, more than twenty years ago.

PHOSPHATES, LUMBER AND ORANGES

Tampa is the commercial metropolis of the southern half of Florida. Every acre that is developed in this vast section adds to the prosperity of this city, increases the business of its one hundred and twenty-seven wholesale houses, which are now doing an annual business exceeding thirty-five million dollars, and builds up its banks. Thousands of families who are settling in Tampa's trade territory every year, are making land that never before knew the plow or the hoe, to produce crops of vegetables and golden fruit that rival the richness of the Nile valley. Orange and grapefruit culture is increasing by leaps and bounds, as these fruits become each year more and more a necessity among the people of the United States, to whom Florida growers are demonstrating the superiority of their product over that of California.

TAMPA'S DEEP WATER FACILITIES

As Florida leads the world in its phosphate deposits, so will Tampa retain its supremacy as a phosphate shipping port, more than one-half of the world's supply being in Tampa's trade territory. The one hundred and fifty billion feet of standing timber in this territory and in southern Florida, is finding its way to the markets of the world through Tampa's port, and this trade is increasing annually.

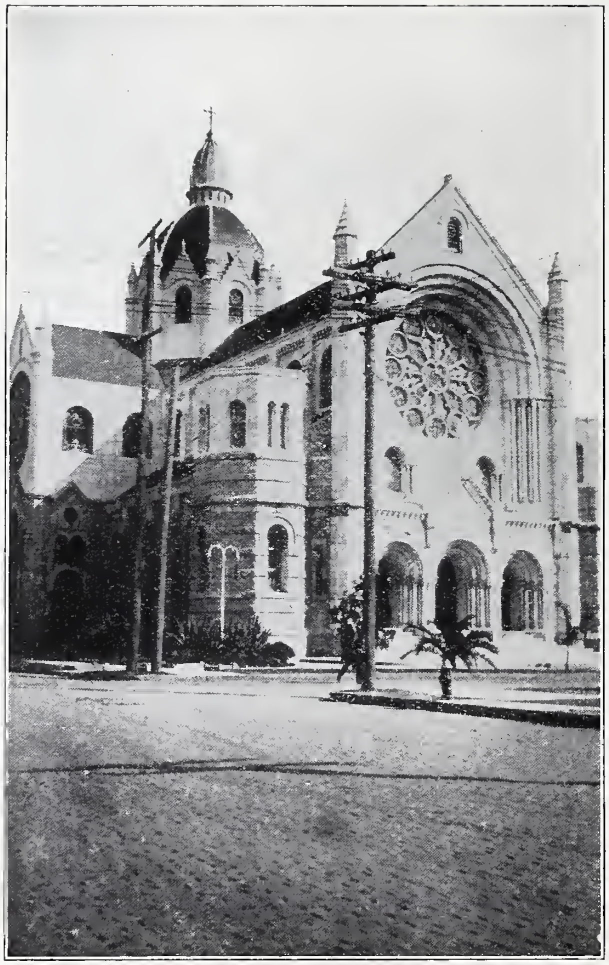
Tampa's deep water harbor—twenty-four feet to the gulf—its modern facilities for loading and unloading vessels—a four-thousand ton ship can be loaded between sunrise and sunset of the same day—and its enormous shipments of phosphate and lumber have contributed to the city's growth and prosperity.

Tampa's water-borne traffic amounted in 1912 to 1,823,000 tons, valued at $30,104,414. This showed a large increase over the tonnage and values of the previous year, despite the fact that there was a decrease of about thirty percent in the bulk of phosphate and lumber shipments, due to causes temporary in their nature. Nine hundred and thirteen vessels, with a net tonnage of 1,333,925 tons, engaged in foreign and domestic trade, and representing fourteen nationalities in their ownership, cleared the port in 1912. Five million dollars' worth of crude and refined oils came through the port from Mexico and Texas. The oil is used largely as a fuel by manufacturers who have found it more economical than coal in this city and throughout south Florida.

As an entrance for immigration, Tampa ranks seventh in the United States, exceeding New Orleans and Galveston, and it is twelfth among the cities of the United States as a revenue producer for the national treasury. The customs collected at this port in 1885 amounted to $683; in 1912 they totaled $1,867,764. With the completion of the Panama canal, to which Tampa is acknowledged to be, according to a resolution adopted by the Congress, the nearest point of importance in the United States, the commerce passing through this port will doubtless double in value within a few years, and the customs receipts will as surely keep pace.

CIGAR MANUFACTURES

While Tampa includes among its industries wood-working plants, foundries and machine shops, trunk, mattress, brush and broom factories and scores of smaller industries, its principal output is from its manufacture of clear Havana cigars. This manufacture was started here about 1888, and as late as 1893 there were but two factories in this city. There are more than two hundred of them today, many of them of the most modern construction, paying their fifteen thousand employees more than a quarter of a million dollars weekly for their services. More Havana cigars are made in Tampa than in any other city in the world, the average of a million a day exceeding the output of Cuba, where is grown all the tobacco used in their manufacture. While some of these cigars are sold for more than a dollar each, the average price by the thousand received by the manufacturers is $85. This great industry in Tampa pays to the United States Government in customs and internal revenue taxes, about two and three-quarter millions of dollars annually. Tampa manufacturers make their own cigar boxes and several factories print their wrappers and labels.



CATHOLIC CATHEDRAL—TAMPA

VIEW IN CITY PARK, TAMPA

TAMPA BAY HOTEL AND PARK, TAMPA

TRANSPORTATION FACILITIES

Tampa's rail facilities are ample for its immediate needs, the Seaboard Air Line, the Atlantic Coast Line and the Tampa Northern entering the city. These roads give the port through connections with the north, east and west. Their terminals are adequate to care for all inbound and outbound freight, whether by water or rail. There are regular lines of passenger and freight steamships plying between Tampa and New Orleans, Mobile, Key West, Havana and New York, making weekly and semi-weekly trips, and a freight line with bi-weekly sailings to Philadelphia. Both the Seaboard Air Line and the Atlantic Coast Line are making terminal improvements, which will be of great advantage to Tampa, and with the completion of the Coast Line's west coast cut-off, this city will have direct and shorter connections with Atlanta, Montgomery, and Birmingham and through these cities to the north and west, and these connections will bring large tonnage of freight from those sections to points via the Panama canal, passing through this port.

TAMPA'S MUNICIPAL GROWTH

A city's growth may be accurately gauged by its postoffice receipts and its building permits, and in each of these items Tampa shows a splendid and persistent increase. Her postoffice receipts in 1912 were $188,027, an advance of eight percent over those of the previous year. The building permits for the same year involved an outlay of $1,838,011. A seven-story hotel was completed in 1912 and a ten-story hotel is under construction in the latter part of 1913. Improvements aggregating hundreds of thousands of dollars in value were made in the suburbs and are not included in the figures already given. The values involved in Tampa's building permits for 1912 exceeded those of nineteen American cities with populations ranging from forty-one thousand to one hundred and twenty-nine thousand.

Tampa has eight banks, three national and five operating under state charters, and the ninth was organized in 1913. The combined capital and surplus of these institutions were more than twelve hundred thousand and their deposits nine million dollars. These institutions are managed by men who have conservatively extended accommodations to all safe and worthy enterprises which make for the advancement of the section. Their faith in Tampa's future was evidenced by their taking more than six hundred thousand dollars of a recent issue of city bonds for municipal improvements.

Tampa is moving forward rapidly and its friends boast that it will be the principal city on the Gulf of Mexico within a generation. It has recently issued bonds for nearly two millions of dollars to be expended for municipal improvements, which will include a new city building, a Carnegie library, will add fifty miles of paved streets to a large mileage already in use, thirty miles of sewers, and a modern bridge over the Hillsborough river, connecting the business and the residential sections.

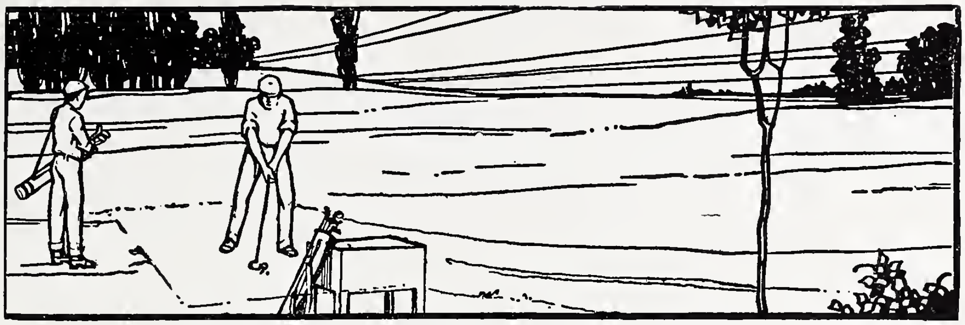
The Federal Government is spending an appropriation of nearly two millions of dollars in deepening an estuary, which when completed will give eight additional miles of deep water frontage. The city owns property along this improvement, controls its development and thus has the assurance of a port free to the commerce of the world. Congress has ordered to survey for thirty feet of water from the Gulf of Mexico to these docks.

Efficient public utilities corporations, owned and backed by foreign capital, are spending a million of dollars in enlarging their plants and extending their systems, preparing for a city of one hundred thousand inhabitants in 1920. What better evidence can there be of the certainty of Tampa's rapid and substantial growth?

CHAPTER XXIII

PENSACOLA

BY LELAND J. HENDERSON



PENSACOLA marks the site of one of the earliest European settlements on the western continent. For almost four hundred years it has been a scene of activity, first, as an outpost where civilization met the opposition of Indian hatred; in later years, as the strategic value of the position was appreciated, Spanish authority in the Floridas encountered the spreading influence of the French, whose pioneers had occupied the Mississippi valley and were seeking an outlet to the Gulf of Mexico. Still later the English made a third party to the fight for possession. And in the early decades of the twentieth century the arts of peace are finding in these same strategic advantages fitting place for their natural development.

Pensacola is located on the north Gulf coast of the United States. It is the metropolis of western Florida. It is the county seat of Escambia, the westernmost county of the state. It lies four miles from the gulf and seven miles from the mouth of Pensacola Bay, which is the finest natural or artificial harbor south of Newport News, and one of the finest in the world. Her wharves are ten miles from the outer harbor buoys in the Gulf of Mexico.

The section immediately tributary to Pensacola is known as the Perdido country, taking its name from the Perdido Bay and river, which separate Escambia county in Florida, from Baldwin county in Alabama. The two counties constitute the original Perdido country, which is one of finest agricultural promise and which already has entered upon a splendid farm development.

EPOCHAL POINTS OF HISTORY

1528—Discovery of Pensacola Bay by Spanish Captain-General Panfilo de Narvaez, thirty-six years after the discovery of America by Columbus.

1540—Second visit of white men to Pensacola Bay, under Capitano Malenado, commander of the Spanish fleet of Hernando de Soto. He names the harbor Puerta d'Anchusi.

1559—Don Tristram de Luna, a Spanish explorer, cast anchor in Pensacola Bay, August 14th, and called it Santa Maria. Settlement made by him on the site of what is now Fort Barrancas and called Santa Maria, thus antedating the founding of St. Augustine by six years. First church and church bells in the United States.

1562—Settlement of Santa Maria abandoned by de Luna.

1693—Don Andres de Pes, Spanish, enters bay and calls it Santa Maria de Galva.

1696—Resuscitation of Pensacola by another Spaniard, Don Andres de Arriola, on the former site of Santa Maria. The name Pensacola first applied to the settlement, probably from Pensacola, a fortified seaport town in Spain on the Mediterranean coast. Fort San Carlos built on present site of Fort Barrancas.

1699—French expedition under D'Iberville takes possession of the country west of the Perdido river. Settlement made at Biloxi, February 27th.

1702—Mobile settled by the French.

1719—French under D'Iberville capture Pensacola, May 14th, Pensacola and Fort San Carlos destroyed.

1720—Treaty of peace signed between Spain and France.

1723—Pensacola restored by France to Spain. Settlement made on Santa Rosa Island at point near the present site of the Life Saving Station.

1743—Beginning of lumber business in Pensacola.

1754—Settlement on Santa Rosa Island, a low sand spit, destroyed by storm. Settlement removed to north side of the bay, on present site of Pensacola.

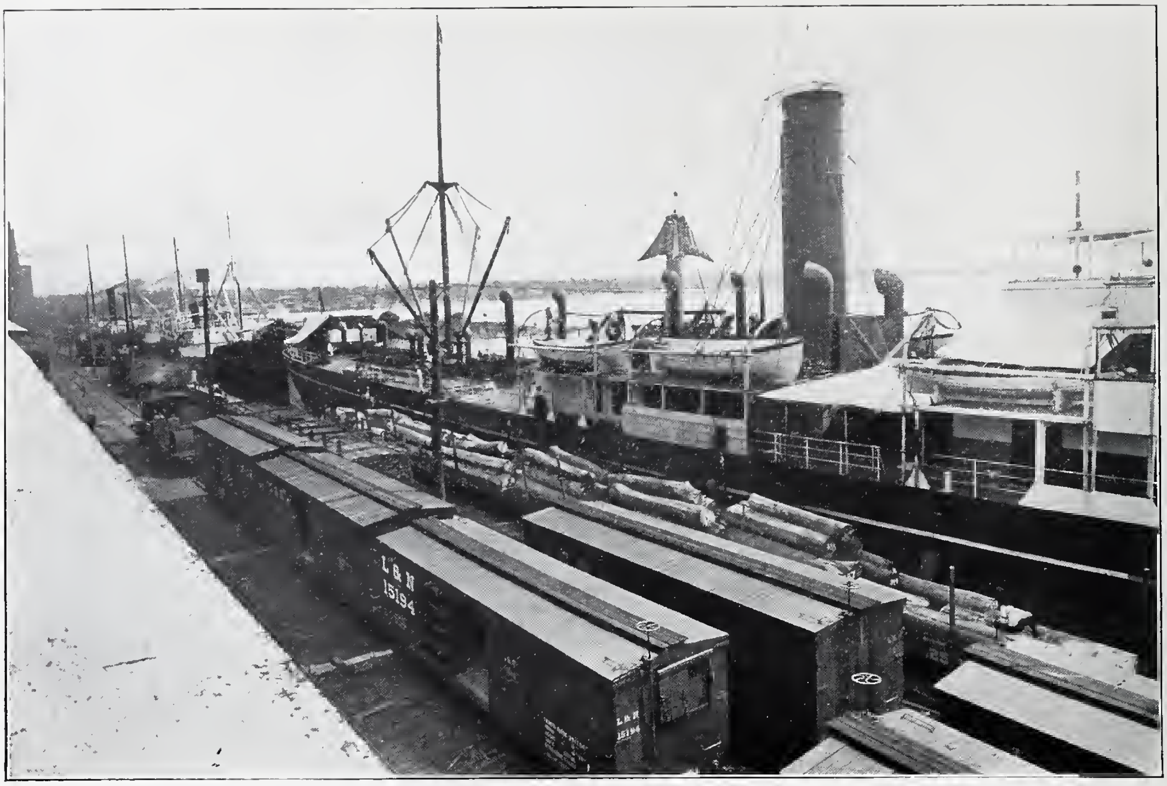
1763—Cession of Florida to Great Britain by Spain.

1764—Limits of East and West Florida established, with Pensacola as capital of West Florida. Pensacola surveyed and laid off by English. Streets named, and George Street, now Palafox Street, extended through swamp to Gage Hill, now Lee Square.

1765—Drainage of swamps in Pensacola started.

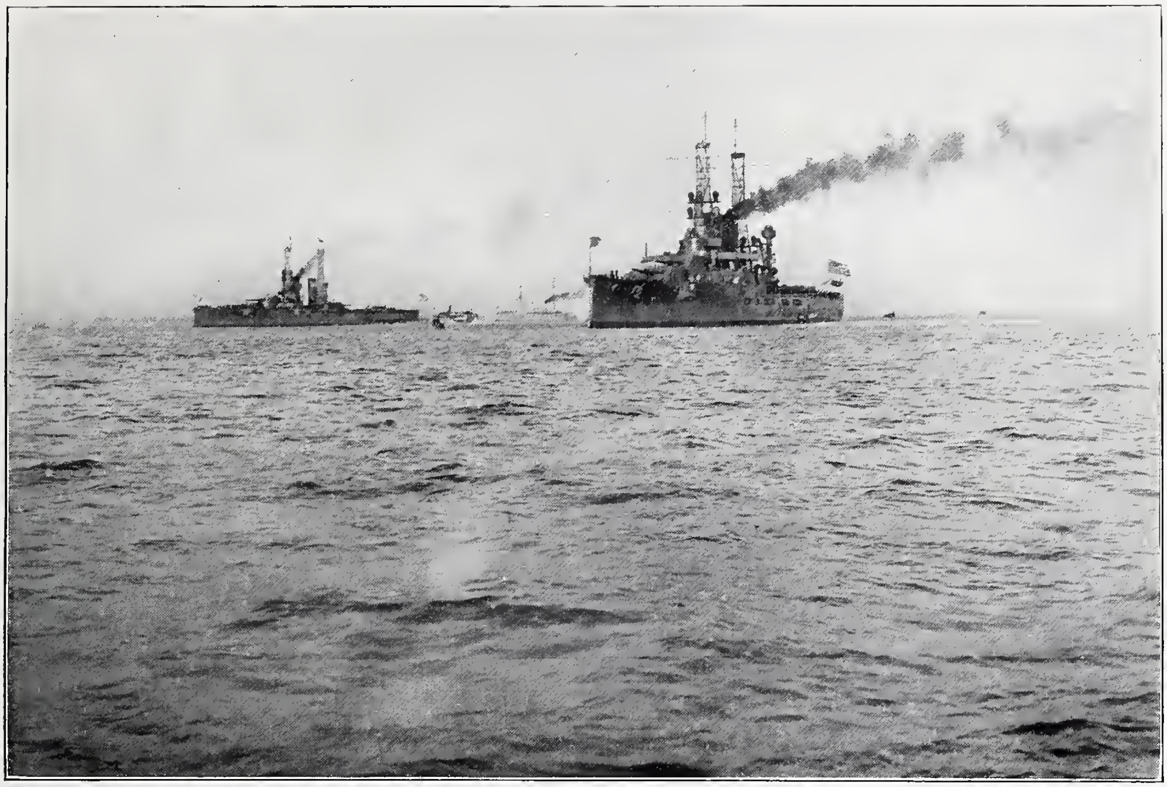
1767—Courtesies exchanged between Pensacola and Philadelphia.

1772—Fort built on Gage Hill and named Fort George for King George III, on the present site of Lee Square. Communication kept up by signal with Tartar Point, now the Navy Yard, and Red Cliff,



UNLOADING CARGO FROM SOUTH AMERICA

UNLOADING CARGO OF MAHOGANY LOGS



U. S. BATTLESHIPS AT ANCHOR IN PENSACOLA HARBOR

NAVAL STORES YARDS, PENSACOLA

now Fort Barrancas. Powder magazine on site of present Fort Redoubt.

1773—First election in Pensacola called by Governor of British West Florida to elect assemblymen. Its failure on account of length of term of assemblymen causing opposition from the people. Penton, Leslie & Company, a Scotch house of great wealth, engages in business; their building still stands as hospital of James Herron.

1779—Value of Pensacola Harbor recognized by British Government and site for navy yard selected, adjoining the town on the west.

1780—Town visited by slight earthquake shock. Famine at Pensacola and Fort George.

1781—Fort San Bernado built one-third mile north of Fort George. Pensacola taken by the Spanish.

1783—Sawmills, brickyards and tanyards established at Pensacola.

1796—Town laid out between one-quarter and one-half miles from Fort San Carlos by Vincente Folch Juan, who named it San Carlos de Barancas. His plan was to substitute this town for Pensacola as the capital, but it was defeated. Beginning of the mutilation of the English plan of Pensacola. Ship Pensacola, eight hundred tons, built at Caranaro, the cove in which the Marine Railway is now situated.

1808—Name of George Street changed to Palafox Street for Jose de Palafox y Melzi, a captain-general of Aragon, Spain. Zaragossa Street named for a city of Spain. Baylen Street named for Baylen, a city of Spain. Romana Street named for Marquis de Romana, the most illustrious general Spain produced during the great Peninsular war. Tarragona Street named for Tarragona, a city of Spain.

1812—Pensacola a base of Indian supplies in the War of 1812.

1814—Pensacola and fortifications again taken by the British. Gen. Andrew Jackson begins march on Pensacola, October 27th. Holds conference with Don Manuel Gonzalez, owner of a cattle ranch at Vacarai Baja, now Oakfield, six miles north of Pensacola on the Louisville & Nashville Railway. Forts Barrancas and St. George surrendered to General Jackson, November 7th. Fort St. George blown up by General Jackson, November 9th. He departs from Pensacola.

1818—General Jackson begins second invasion of West Florida in May and captures Pensacola and Fort George. Appoints Colonel King as civil and military governor. Florida ceded to the United States, but not ratified.

1819—Pensacola restored to Spain by United States.

1820—Constitutional Convention of Alabama memorializes Congress to embrace West Florida within the boundaries of that state.

1821—Treaty ratified by Spain, February 19th. General Jackson appointed Provisional Governor and proceeds to Pensacola from New Orleans. Makes headquarters at Fifteen-Mile House, or Gonzalia, the cattle ranch of Manuel Gonzalez, now the site of Gonzalez, Florida, on the Louisville & Nashville Railway. Change of flags takes place on July 16th.

1822—Congress established territorial government for Florida with W. P. Duval of Kentucky as first Governor. Legislative Council convenes in Pensacola, but on account of fever adjourns to the Fifteen-Mile House, or Gonzalia, which house is still standing, and here the Florida Statutes of 1822 were enacted.

INDUSTRIAL PROGRESS

The real industrial development of Pensacola has come since 1903. Four years of that time were occupied in preparation, and actual physical construction has been in progress during the last six years. This will be shown by the following figures:

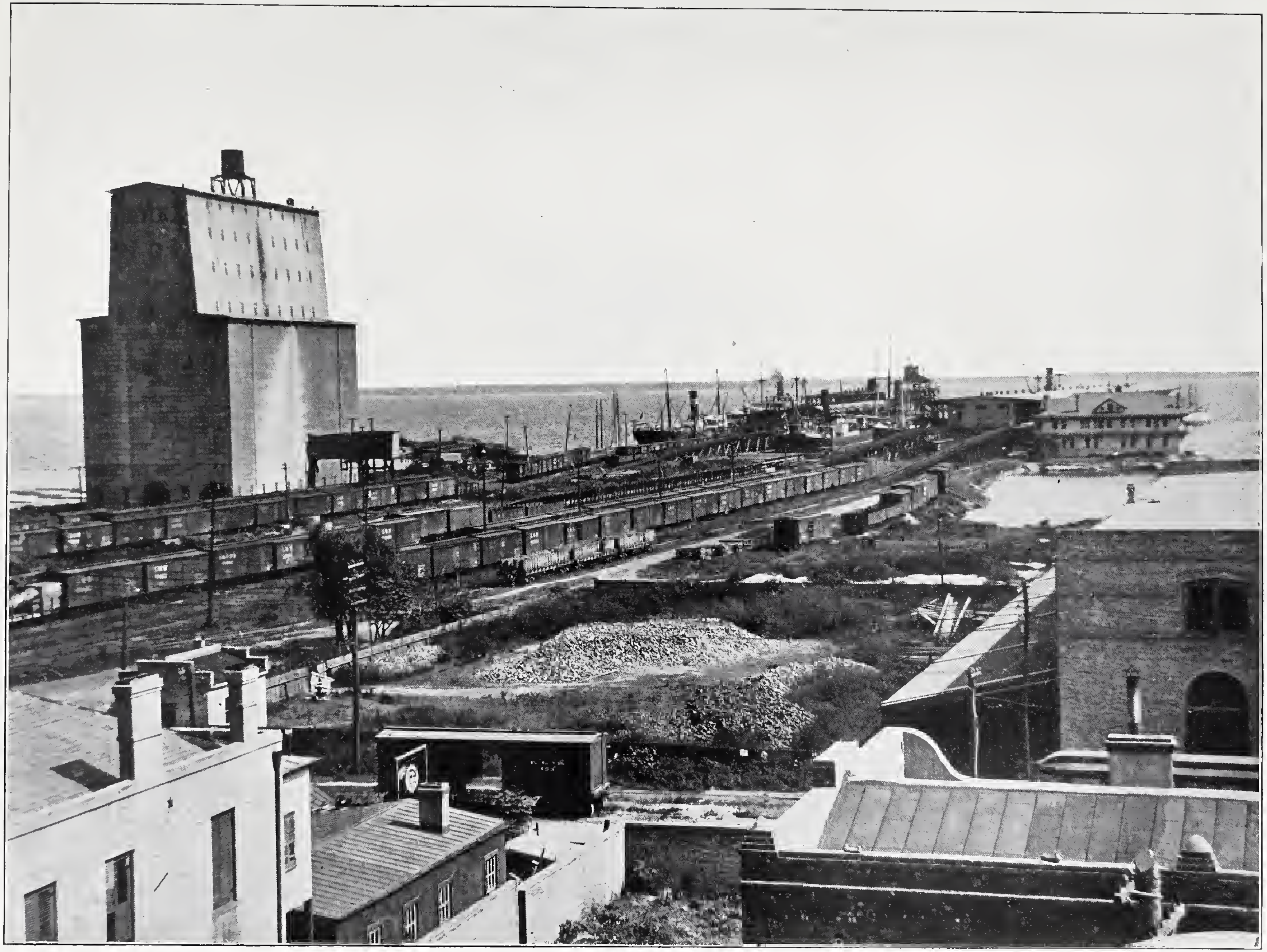
During the year 1912 the Pensacola Commercial Association itself has set the pace for the city with its increase in membership of more than 200 percent, and an increase in revenue of more than 50 percent.

There has been an increase of 5 percent in the postoffice receipts; of 17.8 percent in the exports, and of 23½ percent in building operations.

During the decennium ending December 31, 1912, the mileage of sanitary sewers has been increased nearly 1100 percent; of storm sewers, 2200 percent; of paved streets, 8300 percent; of paved sidewalks, 2200 percent; and of water mains, 143 percent; the assessed valuation of city property, 131 percent; the number of buildings (three story and over), 300 percent; the number of telephones in use, 300 percent; postoffice receipts, 240 percent; exports, 71 percent; bank deposits, 143 percent; and bank assets, 176 percent, for the banks in business during the entire period. The city has been authorized to issue bonds to the extent of $1,681,000.

DEATH RATE

The death rate in Pensacola of 14.4 for whites and of 24.26 for negroes, for each 1,000 of the respective populations, is too high. It



WHERE RAIL AND OCEAN LINES MEET

is occasioned, in part, by the fact that invalids seek the city and while many are benefited by natural conditions of climate, this class of population tends to increase the death rate. The negro death rate is greater than the birth rate of the race. It is 70 percent higher than the white death rate.

HARBOR FACILITIES

Despite the fact that in the old days vessels were much smaller and the number entering and leaving the port in 1902 was greater than in 1912, the tonnage in the latter year was much larger.

Pensacola is fast becoming a leading cotton port in the United States. She almost holds the supremacy as a lumber export port, and occupies the second or third place in the export of naval stores.

Pensacola has four railroads already built to her limits or under construction. Her superior harbor and her accessibility from the entire central part of the Unites States makes this a natural railroad center. From the center of population of the United States the shortest rail route to any seaboard point, is to Pensacola. Recently authorized public wharves and the belt railway makes Pensacola a "free port."

All the improvements in Pensacola's harbor have cost the Federal Government but $1,297,000, less perhaps than the development of any other important port in the country. At small additional cost this harbor could be given a depth of fifty feet.

The payroll of Pensacola's industries amounted to $2,000,000 in 1912.

ADVANTAGES TO MANUFACTURES

In considering the advantages of Pensacola as a manufacturing center, climate must not be lost sight of. Its mildness reduces heating for human comfort to a minimum. Lack of extremes of summer heat and winter cold causes a minimum of contraction and expansion of metals. Waterways in the south are never closed to traffic by ice, as in northern latitudes. The climate permits outdoor labor in every month of the year. The average annual temperature is 68°; the annual rainfall, 56¼ inches; the wind velocity, 9.1 miles an hour. Drinking water from a health viewpoint, is absolutely pure. The land is undulating, with an elevation of from 90 to 110 feet above sea level; surface drainage is good; streets are well shaded by trees in the residence districts. Few mosquitoes are found here because of the topography, drainage and absence of low lands. In the entire county of Escambia three are less than four hundred and fifty acres of swamp. The average cost of living in Pensacola is not higher than in other cities of approximately the same population.

FACTORY SITES

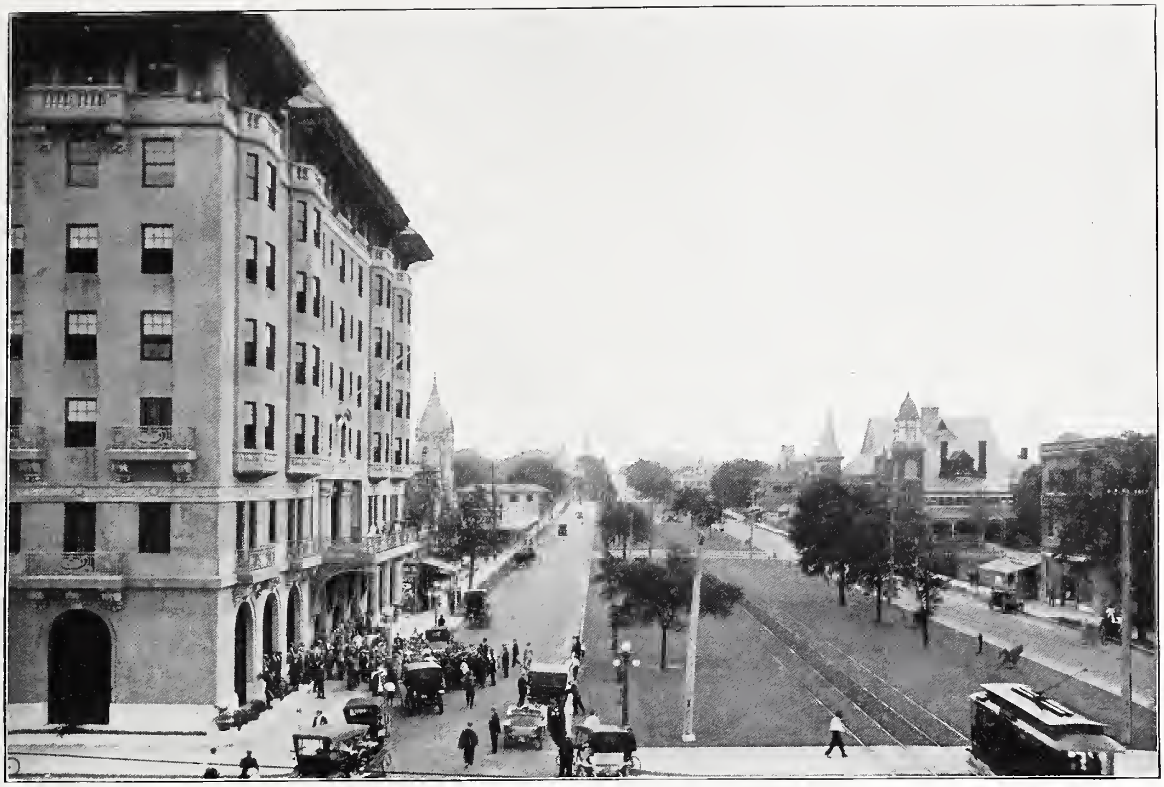
On the city side of Pensacola Bay there are available for wharf purposes some six miles of shore line adjacent to the deep water of the harbor. Besides this, on the east side of the city is a fine inner basin of considerable width and some four miles long, suitable for pleasure craft and bathing, running through the East Hill residence section. Immediately west of the city is a similar basin along which are located some of the city's industries. Further west and toward the mouth of the harbor is a great natural basin many miles in length and of varying width, offering facilities for barge traffic and sites for factories to an almost unlimited extent.

If a city of the territorial area of Seattle, which by the last Federal census has a population about ten times that of Pensacola, were to be placed here, it would cover all the lower end of Escambia county to a line drawn from the Perdido river at Muscogee, through the Cantonment to the Escambia river. It would have twenty-five miles waterfront on Pensacola Bay and Grand Lagoon, eighteen miles on Perdido Bay, ten miles on the Perdido river, and seven miles on the Escambia river. A location for industrial and manufacturing plants more nearly ideal than this would be difficult to imagine.

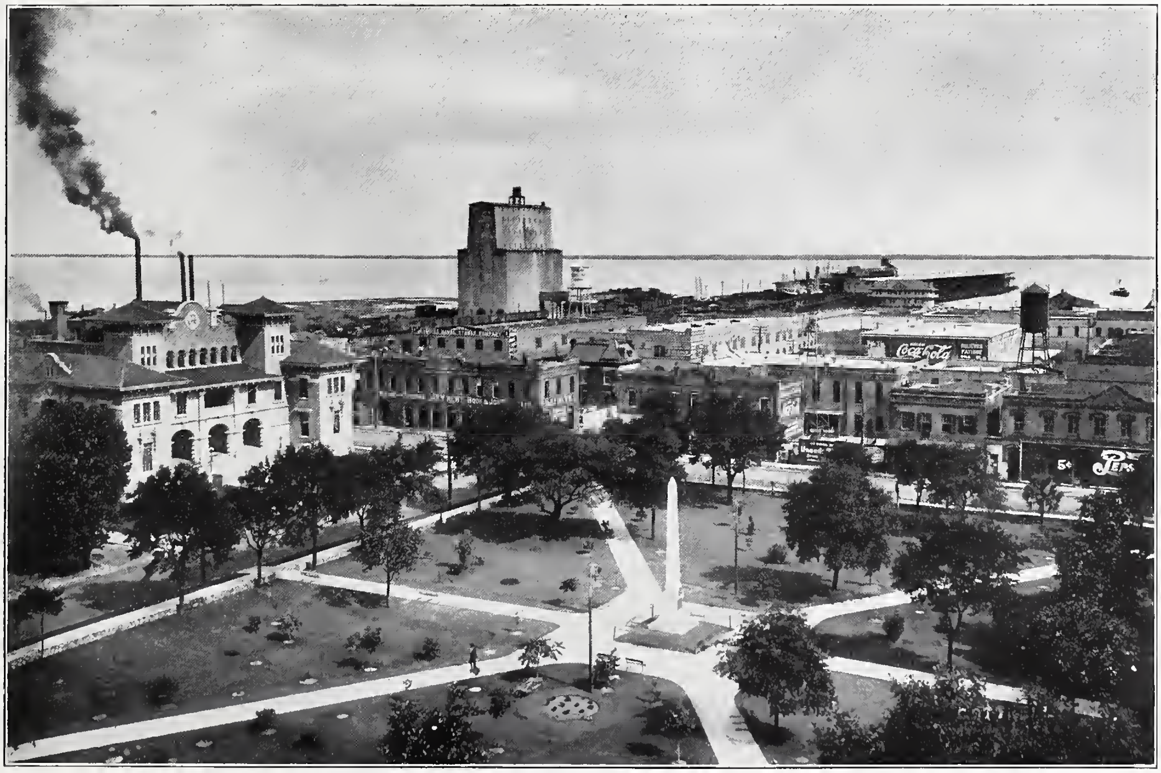
RAW MATERIAL

Domestic: As shown by the record of exports, which for the fiscal year ending June 30, 1912, were valued at $24,037,070. They included more than two hundred thousand bales of cotton; of lumber, sawn and hewn timber having a value of more than five and one-half million dollars; 383,000 barrels of rosin and 3,100,000 gallons of turpentine; 598,000 staves; coal, copper ingot, phosphate, pitch and tar, tobacco, steel rails, pig iron, cotton-seed oil cakes and miscellaneous articles.

Some of the resources of the south, partly tributary to Pensacola, indicated by the annual output, are: Coal, 131,970,000 tons; iron ore, 5,736,000 tons; phosphate rock, 3,400,000 tons; petroleum, 84,800,000 barrels; natural gas, 290,000,000,000 cubic feet; sulphur, 690,000 tons; grain, 1,104,200,000 bushels; cotton, 13,870,000 bales; cotton seed, 5,500,000 tons; rice, 24,000,000 bushels; lumber, 20,000,-



PALAFOX STREET AND PARKWAY



THE PLAZA SURROUNDED BY BUSINESS SECTION. SHIPPING IN THE DISTANCE

000,000, feet; pig iron, 3,054,000 tons; coke, 7,974,000 tons; Portland cement, 11,000,000 barrels. The south is the center of the world's production of lead and zinc, and is the main source in this country of bauxite for the manufacture of aluminum.

Foreign: As shown by the imports, which for the fiscal year ending with June 30, 1912, had a value of $1,534,115. These consisted of 12,800,000 superficial feet of mahogany logs; 1,200,000 feet of cedar logs, and the following articles in varying amounts: copper ore, muriate of potash, sulphate of potash, kainit, manure salts, sulphur ore, iron pyrites, sisal grass, nitrate of soda, sulphate of ammonia, chalk, guano and other miscellaneous articles.

While the articles already listed constitute those arriving and leaving through the Port of Pensacola, many, if not all, of the imports of the United States used in manufacturing should be considered available to Pensacola, for the reason that foreign commerce now goes through this port to Austria, Germany, The Netherlands, Spain, France, Scotland, Mexico, Belgium, England, Italy, Cuba, Haiti, Portugal, Argentina, Brazil, Uruguay, Morocco, Canary Islands, Denmark, Jamaica, British West Indies, Egypt, Azores, Portuguese Africa, British Honduras, French Africa, San Domingo, British East Africa and Ireland.

POWER AND FUEL

For the present coal only is available for power for Pensacola. In the mines of Alabama are 69,000,000,000 short tons of bituminous coal. Up to the year 1908, the total production of coal in the United States had been 10,218,000,000 short tons. In other words, Alabama has six times as much coal stored in her mines as had been produced in the entire United States prior to 1908.

The coal production in the United States for 1909, was 379,744,527 tons, having a value of $405,486,777, at $1.07 per ton. At this rate, the bituminous coal of Alabama is worth nearly seventy-four billion dollars. The value of bituminous coal at Baltimore in 1910, was $2.60 per ton. At Pensacola it was $2.35 a ton, allowing $1.25 for the coal and $1.10 for transportation from the mines. This cost of carriage will be reduced to 75 cents when inland water transportation between the Warrior coal fields and West Florida shall have been provided, and this is now under way.

An enormous development of hydro-electric power in the territory adjacent to Pensacola has already been partially accomplished.

The lines of this development will reach this city and section within a few months, bringing motive power for manufacturing at low cost and of large efficiency.

LABOR

The population of Pensacola and its suburbs is about thirty thousand. Nearly twenty per cent of this population was on the payrolls of Pensacola's industries in 1912. The average yearly wage was $411.

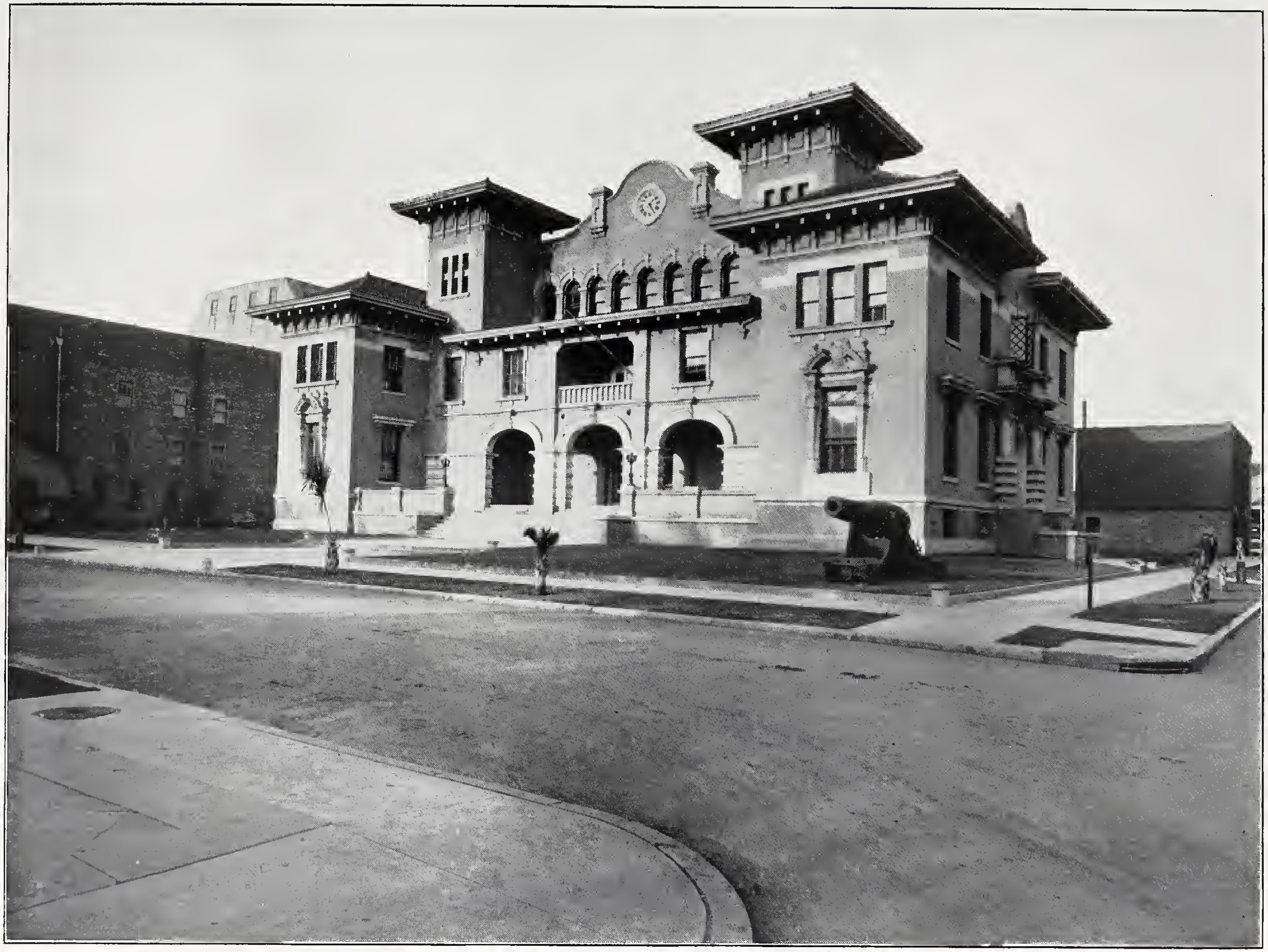
PENSACOLA'S MARKET

Pensacola claims as her trade territory a large part of the producing section of the United States, for the following reasons: The distance of the center of population of the United States to Tampa, Florida, is 1,158 miles; to Galveston, Texas, 1,145 miles; to New Orleans, 878 miles; to Mobile, 771 miles, and to Pensacola, 754 miles.

In other words, the Atlantic ports are further from the Mississippi valley than is Pensacola; the eastern part of the United States, including the Appalachian hardwoods, and the iron and coal region is nearer to Pensacola than to any other Gulf port. The central western states and the Great Lakes region are nearer to Pensacola than to any other Gulf port, save Mobile; while the great Mississippi valley is nearer to Pensacola than to any other Gulf ports, save Mobile and New Orleans. In addition, Pensacola has water competition with the Gulf and Atlantic coasts of the United States, and with the opening of the Panama Canal it will have competition with the Pacific Coast ports for South American trade.

TRANSPORTATION FACILITIES

The existing land facilities for transportation are the following: The Louisville & Nashville Railroad, which handles annually at Pensacola 55,000 cars of freight. It is a trunk line touching the Mississippi river at St. Louis, Memphis and New Orleans, with northeastern terminals at Cincinnati, southeastern terminals at Atlanta and rail connections to all parts of the United States and Canada. This road uses in Pensacola the terminals of the Gulf Transit Company, which owns wharves with an aggregate extent along a 28-foot water front of nearly seven thousand feet. The road has extensive yard room and trackage and freight depot, and has just completed a passenger station at a cost of $125,000.



MUNICIPAL BUILDING, PENSACOLA

The Gulf, Florida & Alabama Railroad, soon to be completed, will handle through Pensacola annually 325,000 tons of coal, 12,000 cars of lumber, 1,150 cars of naval stores and more than eighty thousand bales of cotton. This road has already constructed 2,700 feet of wharfage at 22 feet of water, over which it is expected that a large tonnage of ocean freight is to be handled.

The Pensacola, Alabama & Tennessee Railroad, completed to Mobile, has here a dock 1,250 feet long, and a branch dock 800 feet long, both equipped with railroad tracks, from which loaded cars may transfer their freight direct to deep-draft vessels.

STEAMSHIP LINES

The steamship lines touching regularly at Pensacola are:

The Gulf Transit Company, operating four lines to Liverpool, Bremen, Havre and Genoa, respectively.

The South Atlantic Steamship Company, to Liverpool.

The Vogeman Line to Holland, France, Spain and Mediterranean points.

The Gans and Leyland lines, to Liverpool.

There are also two coastwise lines to New Orleans, Mobile and other points, and a number of river steamers making regular trips to the smaller places.

The City of Pensacola has voted bonds for municipal docks, warehouses, storage yards and a marginal or belt railway.

TRANSPORTATION RATES

The ethics of the principle that the cost of transporting freight increases with the distance, must be admitted. Accordingly, for economic advantage, industries should be located so as to require the minimum haul on materials used in manufacturing and on the manufactured articles to reach the consumer. It may happen, however, that raw material or manufactured product may be transported a longer distance by a certain character of carrier at the same cost than by another. In this respect seaports should have the advantage over interior manufacturing towns, because water furnishes a cheaper means of transportation than rail.

Therefore, Pensacola's first advantage lies in the fact that it is a seaport, and as a port it is one of the best in the United States.

Its second advantage lies in the location with regard to the Panama canal. From the center of population in the United States to the Panama canal by Pensacola is a shorter rail and water distance than by any other seaport.

Its third advantage, in rates, is the proximity of certain articles used in manufacturing, which are known as raw materials.

A fourth advantage is that Pensacola has a certain trade territory more tributary to it than to any other manufacturing point. Of course, to be added to this is the foreign market which is reached most economically from and through Pensacola.

AGRICULTURAL POSSIBILITIES

In Escambia county, of which Pensacola is the capital, there is room for an agricultural population of a quarter of a million people. There are fourteen varieties of soil and each is suitable for some class of agriculture. The county has an area of 680 square miles, or 435,000 acres, only 448 of which are marsh. The county is fifty miles long, north and south, and varies in width from eight to twenty-five miles. The southern part of the county is level and has an elevation of one hundred feet above sea level. Beginning thirty miles north from the gulf, the surface is undulating.

Well water is found at a depth of twenty to fifty feet, and artesian wells have been secured in a number of localities at a depth of one thousand feet. Artesian water in this vicinity is soft, analyzes pure and there is no superior water for domestic uses and for stock.

POPULATION AND CLIMATE

The population of the county is about 42 percent colored. Soil, climate and transportation facilities through the county are fully equal to those of any other section along the Gulf coast, where agricultural industries have been proved profitable and successful. Cattle, hogs, vegetables, sugar cane, and sweet potatoes have been the principal products. Peaches, grapes, peas, pecans, cotton, sheep and goats and scuppernong grapes have been grown with success. It has been demonstrated that some crop can be grown on nearly every variety of soil that is found in the county. The opportunity is practically unlimited for the successful growing of early and late truck crops for the northern markets.

The value of wild lands varies from $5 to $10 an acre, and improved

ONE OF PENSACOLA'S BEAUTIFUL RESIDENCES

A BAY SHORE RESIDENCE

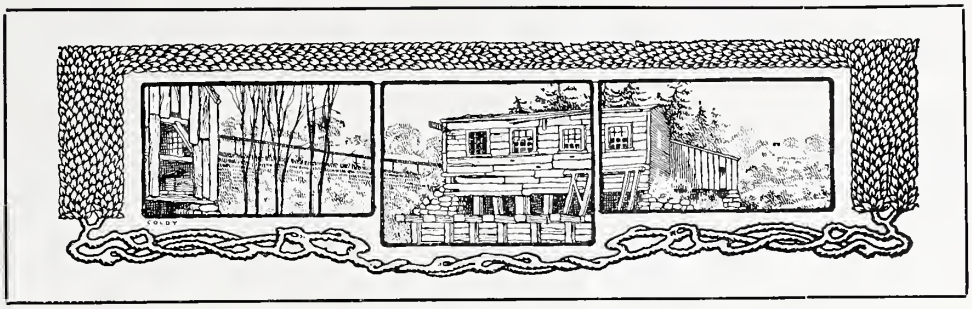
lands are worth from $25 to $100 an acre, according to location and improvements.

According to the latest Biennial Report of the State Department of Agriculture, Escambia county had under cultivation 11,444 acres, producing forty-two agricultural crops, with a value of $417,306, or an average of $36.50 an acre. The valuation of live stock and poultry was $486,392.

The Department of Commerce and Labor, in a recent statement, has the following to say regarding Florida lands: "Every county has some fine lands and every county has some poor lands. It is difficult, however, to tell what is 'poor land.' A short time ago, lands now producing immense crops of Irish potatoes, were considered worthless. A short time ago lands now producing a half-ton of pineapples to the acre, were considered worthless sand dunes. Florida lands which were considered worthless by one set of people and would sell for 50 cents an acre, became in the hands of others worth from $50 to $75 an acre."

CHAPTER XXIV

MIAMI



IT IS difficult to write of a city or a section of which a description today does a woful injustice to its tomorrow,—a town whose development from the wilderness period of its existence to that of an incorporated city, skipping entirely the village stage, occupied less than four months—a place that calls itself "The Magic City" without exciting the envious comments of its rivals. That such a city can and does exist in the tropical portion of Florida will give the world a new conception of the energy that is building up the most southern of all the states. It will emphasize the fact that higher temperatures do not dull the edge of thrift nor reduce physical and mental activities.

Miami, four hundred miles from the northern boundary of Florida, lies among the palms and sub-tropical surroundings that border Biscayne Bay, where the Miami river—the Indian name for "Sweetwater" —joins it. It is the southernmost county seat on the mainland of the United States. No other city of its size or commercial importance is nearer than a day's ride by rail, for Jacksonville, three hundred and sixty-six miles to the north, is reached by a journey of more than twelve hours, and Key West, one hundred and fifty-six miles to the south, is reached over the bridges and islands of the East Coast Railway Extension, where fast time is not expected. Across the waters of the Gulf Stream, Nassau is one hundred and forty-five miles away, and Havana lies ninety miles beyond Key West. Hence, this city is the natural base of supplies and a shipping depot for a vast extent of territory whose resources are being developed with marvellous rapidity.

THE BUILDING OF MIAMI

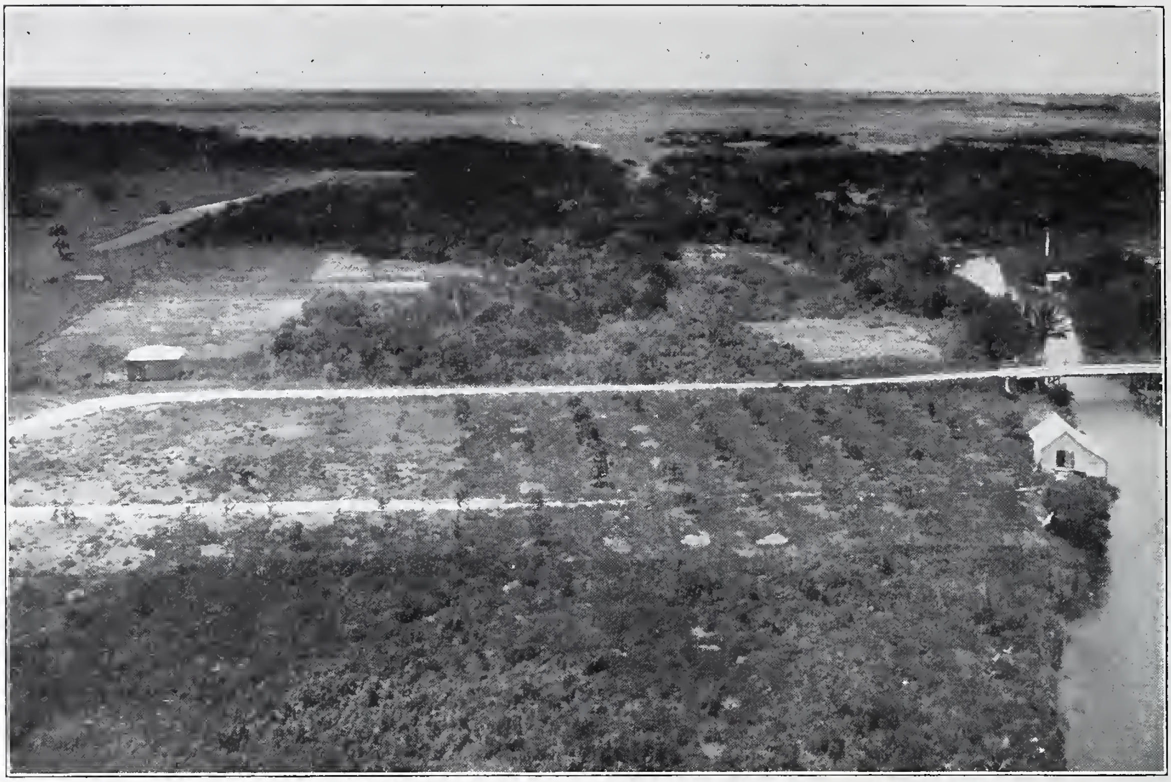
The city of Miami never fails to surprise the visitor. Great cities have been built in the west during the last half century, which have been marvels and models of municipal structure; but even the men of the west who have had part in building these centers of population, compliment Miami by placing it in the same class. From the beginning its residences and public buildings have been erected with a view to permanency. The Florida East Coast Railway reached the point where Miami stands today in April, 1896, and that date is the beginning of the modern city. At that time the settlement consisted of two stores, one on each side of the Miami river at its mouth. That on the north side of the stream was kept by J. W. Ewan, who was also the postmaster, and who is an honored citizen of Miami today. The store on the south side of the river was kept by William B. Brickell.

When the railroad reached Miami it was regarded as the terminus of the road, and it was not until Mr. Flagler's conception of a road across the sea to Key West became a reality, that the territory to the south was made tributary to this center. Mr. Flagler himself realizing the beauty and the advantages of this place erected here the Royal Palm, one of the palatial hotels of the East Coast system.

FORT DALLAS

In Fort Dallas Park, adjoining the Royal Palm Hotel, are the two oldest buildings in Miami, known as the "Seminole Club" and "Old Fort Dallas." Built in 1834 as a manor house and slave quarters, respectively, these quaint stone structures were abandoned by their owner on account of Indian hostilities, and the soldiers who came to hold the passage of the river appropriated the place for defensive purposes. Several skirmishes took place with the Indians, including the massacre of Capt. S. T. Russell's company. The occupation of the post served to prevent the filibustering Cubans from supplying the Indians with ammunition, and later, on account of the remarkable healthfulness of the site, Fort Dallas was used as a general hospital for the fever-wracked soldiers from the north Florida posts. The oldest of the cocoanut palms along the river front were planted by the soldiers and are at least eighty years old. Gen. William T. Sherman, upon his graduation from West Point, served his first commission as commandant of Fort Dallas, having his headquarters in the "Seminole Club" building.

In the early days of Miami the old barracks served as courthouse, jail, postoffice, trading post, church and school, the events of those pioneer days adding much to its historical import. Both buildings have been improved and repaired until only the walls themselves have any antiquity.



LOOKING INTO THE EVERGLADES FROM MIAMI

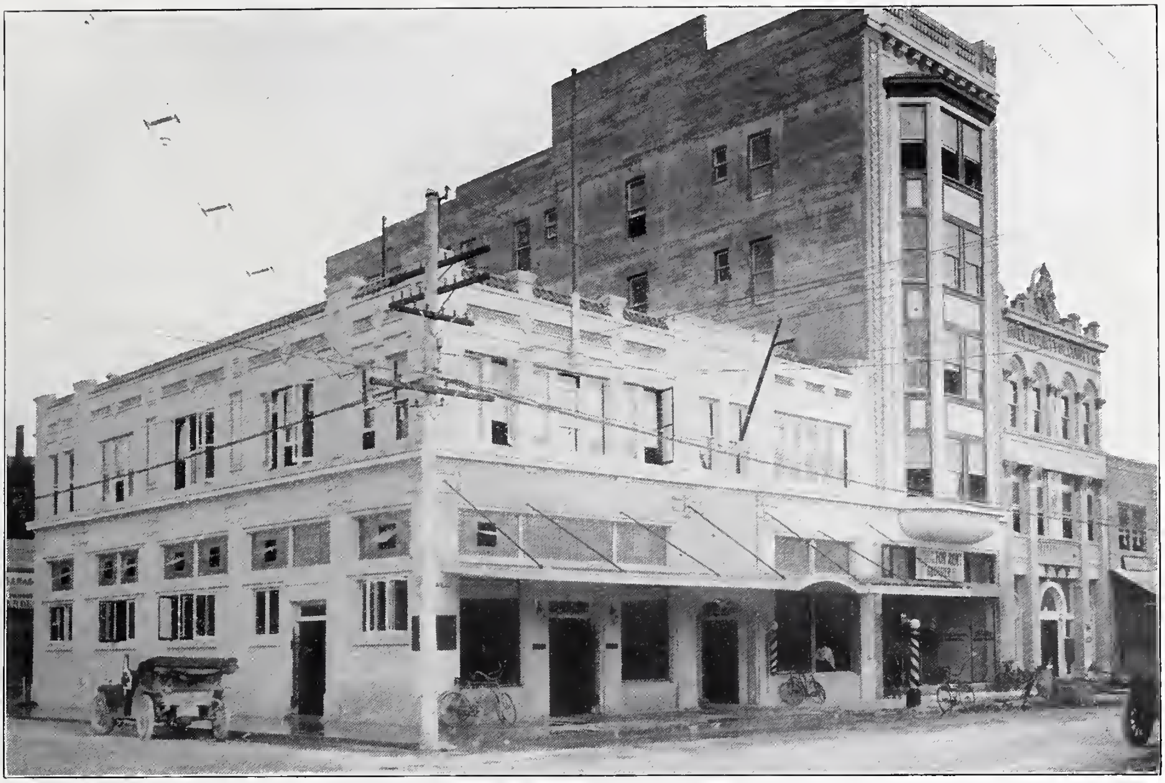
GRAPEFRUIT GROVE NEAR MIAMI

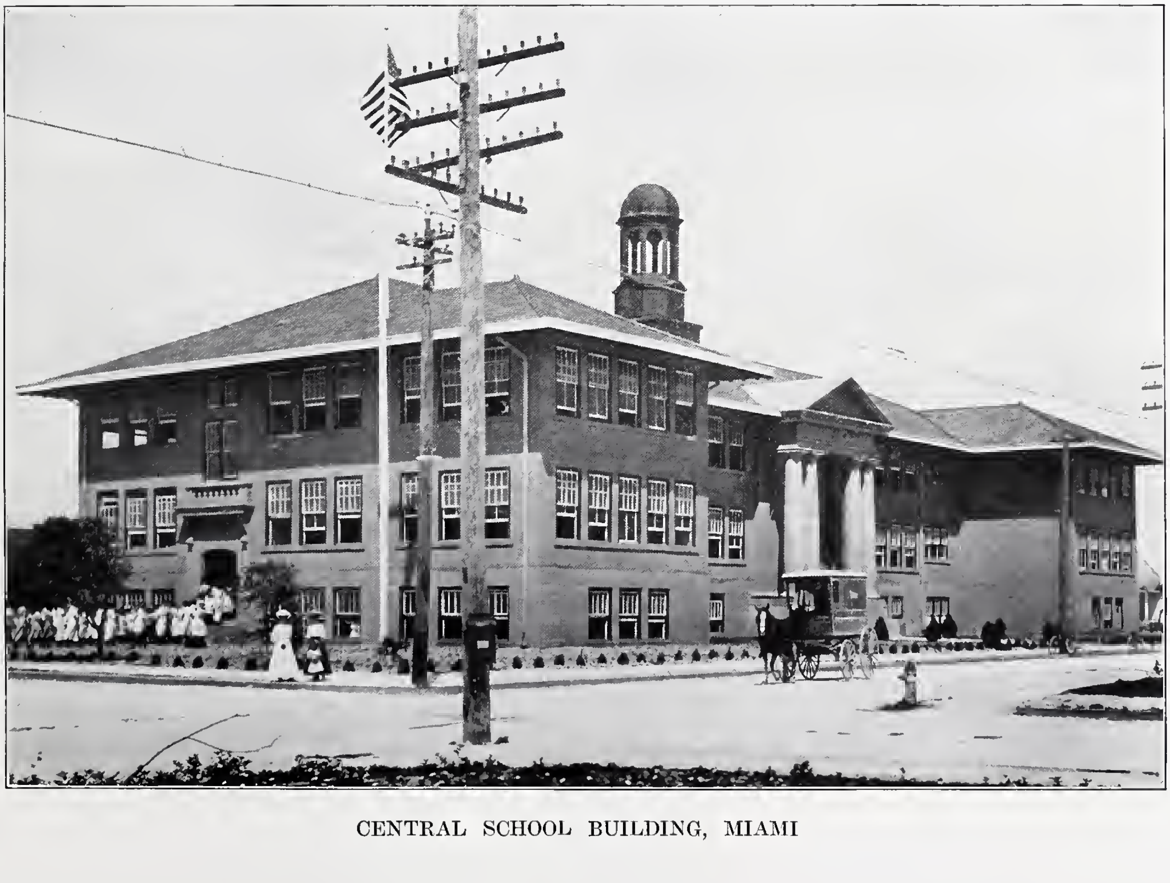
A SUNRISE ON BISCAYNE BAY

BRICKELL'S POINT AT MIAMI

A MIAMI RESIDENCE

A RESIDENCE STREET, MIAMI


BOARD OF TRADE, MIAMI


CENTRAL SCHOOL BUILDING, MIAMI

COMMERCIAL IMPORTANCE

The climate and location of this city on Biscayne Bay immediately commended it as an ideal winter resort, and this was the beginning of Miami's commercial importance. But as tourists and visitors arrived and looked about them, they realized the importance of its industrial possibilities. They bought lands and built homes. They began the cultivation of crops which have made the section famous. Miami is below the line of killing frosts, yet the heat of summer is tempered by the ocean breezes that sweep across Biscayne Bay.

To create a city from the tropical wilderness in fifteen or sixteen years may well be counted a remarkable performance. The census of 1910 gave it a population of 5,500, and although only three and a half years have passed since that enumeration, Miami has now at least fourteen thousand *bona fide* residents. Its winter population is increased by twenty-five thousand or more visitors who remain from three to six months.

It is a city that owns beautiful administration buildings and public parks. It has a well equipped fire department. It is provided with electric lighting, gas, splendid water and telephone services. A few figures emphasize its commercial importance.

The first bank was opened in 1896, the birth year of this city. Now there are six banks with aggregate deposits exceeding three million dollars. Another bank will be in operation by the beginning of the year 1914. The receipts of the postoffice were six thousand, one hundred dollars in 1901. They were forty thousand dollars ten years later. The Federal Government, seeing the necessity, has erected a Postoffice and Custom-House building at an expense of one hundred and seventy-five thousand dollars.

MIAMI'S HARBOR

When the city was young, the ocean was reached from its wharves through a channel of about twelve feet in depth. Its tonnage was eight thousand four hundred tons in 1902. Eight years later this tonnage had increased to half a million, valued at thirteen million dollars.

The tonnage statistics for 1912, as compiled by the Miami Board of Trade, were as follows: Rail tons, 482,598; valuation, $10,618,730. Water tons, 148,862; valuation, $3,850,523. Total tons, 631,460; valuation, $14,469,253. Owing to the shoaling of the harbor, traffic was greatly impeded during this year, and the merchants deferred shipments until late in the season when deepened water would facilitate transportation, thus throwing much of the data into the statistics of the following year.

Government appropriation is dredging a deeper waterway to the Atlantic, and when this shall have been completed Miami will be the most important port of entrance and clearance on the mainland of Florida, south of Jacksonville. Miami looks forward to great importance as a deep water port. Harbor improvements involving the expenditure of a million and a half dollars, will give a channel of eighteen feet to the ocean. Following that, twenty-five feet of depth is already planned for. With a harbor of this capacity there seems to be no reason why, with its excellent rail shipping facilities, the opening of the Panama canal will not add immensely to its importance.

EVERGLADES DEVELOPMENT

In the development of the Everglades, Miami has been and is to be benefited enormously. For this city is the headquarters for marketing immense tracts of land that have been redeemed and are still to be redeemed from the great wilderness of sawgrass. One of the principal canals which will drain Lake Okeechobee reaches sea level at this place. This canal already provides transportation for large sections of rich land already under cultivation, which lie between the east coast and the Everglades proper. In the years to come, when this vast area shall have been turned over to the farmer and the truck grower, Miami's importance as a shipping point will be vastly increased.

Miami is located on the line of the great Inland Waterway, which reaches from Norfolk to Key West and for whose extension to the New England states large interests are working. This waterway, already in use for transportation of freight, will be made vastly more useful with the increasing importance and development of the territory tributary to it. It is already a practicable route for light draft launches and yachts which navigate these waters in large numbers each season.

TROPICAL VEGETATION

It became apparent even to the pioneer settlers, that the section surrounding this town was almost ideally tropical in its climatic conditions and in the character of its soils. Tropical fruits grew wild in great abundance and, foreseeing the advantages of an experiment station here, the Department of Agriculture established propagating gardens and a laboratory. Under the direction of experts, the growing and development of a large variety of tropical fruits were undertaken, and soon Miami became a center which has enriched the farms and groves of southern Florida and largely increased the business of the city.

The pineapple crop shipped from this vicinity exceeds half a million crates annually. Some of the largest grapefruit groves in the world are located near this city. Fruits and vegetables mature here in early winter and are the first in the northern markets.

To list the products which reach their greatest perfection here would be tiresome. It is enough to say that it includes nearly one hundred varieties of fruits and vegetables. It includes nearly all of the products that are grown in the northern half of the United States, and there is nothing that grows on the islands of the southern seas that is not produced here.

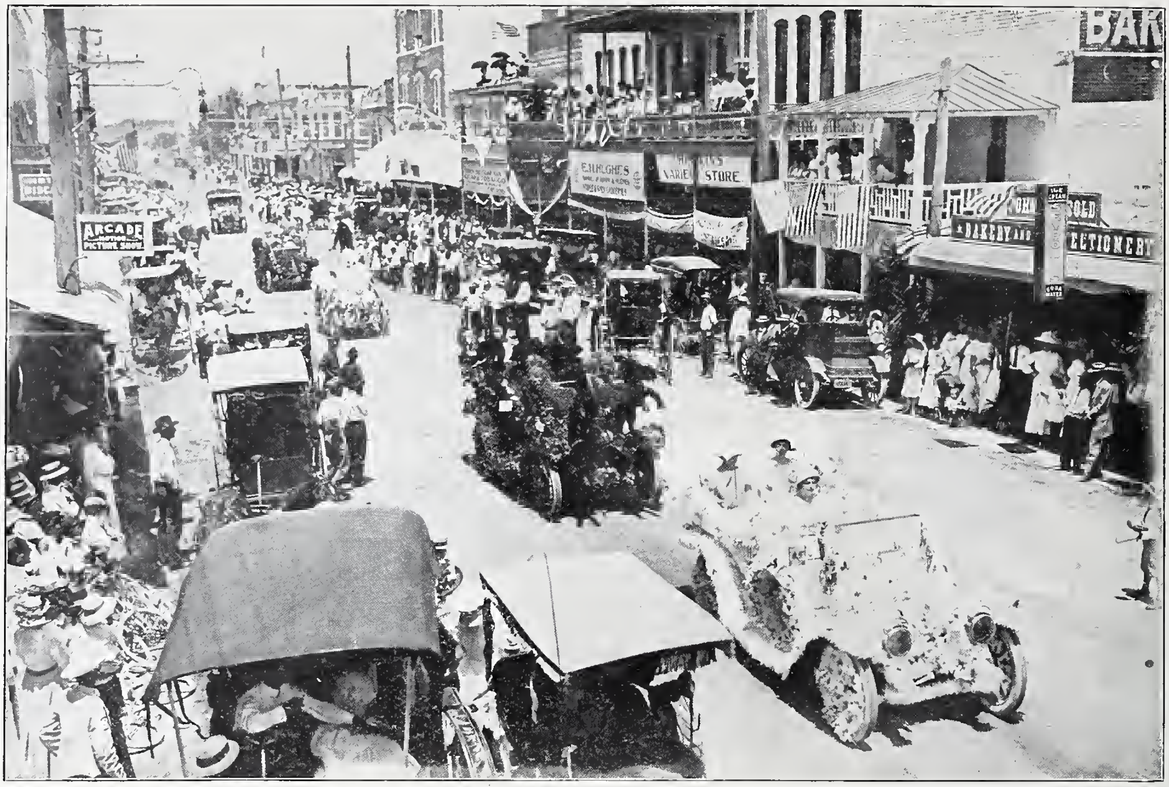
It is but fair to Miami and to the country which surrounds it, to call attention to the fact that, so far as is known, Dade county, of which Miami is the county seat, is the only section of equal area in the United States in which all these tropical fruits may be grown on a commercial scale, and it seems at present impossible to secure an overproduction. Among these tropical fruits, two of the most promising are the avocado and the mango. The recent and rather sudden growth in the popularity of the avocado and the high prices which it brings in local and northern markets, promise to make it more profitable even than grapefruit.

The mango, which is less known, has wonderful possibilities. Its cultivation has been undertaken on a scale which will soon make possible its introduction in large quantities in outside markets. Grapefruit groves are being increased rapidly in number and acreage, and a corresponding increase in the business of the city is noticed.

It would be impossible to name and describe in the limits available, the resources of the soil which, when developed, will add to the commercial, industrial and agricultural importance of this center.

MIAMI'S WATER SUPERB

Lying on an elongated peninsula parallel and directly opposite the "Magic City," fronting on the Atlantic, with the beautiful tropical



MIAMI UPON THE OCCASION OF THE 15TH ANNIVERSARY, JULY, 1911

This parade was two miles long; estimated population at the time, 10,000

HARVESTING IRISH POTATOES ON A MIAMI FARM

BUSINESS STREET, MIAMI

A PRIVATE CANAL INTO THE EVERGLADES, NEAR MIAMI

Bay of Biscayne stretching along its western shore, Miami Beach possesses unrivalled charm as a year-around residence place.

The warm waters of the Gulf Stream tempering the winds of winter, and the cool ocean breezes moderating the heat of summer, give Miami Beach one of the most equable climates in the United States. Cocoanut palms of immense growth, tropical trees and verdure beautify and shade the entire tract, which is traversed by Indian Creek from Indian Lake, an inland body of water, to the bay shore. It is in the heart of this property that the Miami Beach Avocado Orchard covering two hundred acres has been located.

Thousands of dollars are being expended in improvement work on Miami's ocean front properties. The famous Collins bridge, two and a half miles long and spanning Biscayne Bay at a picturesque point, furnishes easy access from the city. Electricity, a water system, sewerage, paved streets, cement sidewalks, dancing and bathing pavilions, a swimming pool, a hardrock road for automobiling, canoeing on Indian Lake, fishing and boating on the bay, afford attractions unpossessed by the recreation parks of many a larger city north and south.

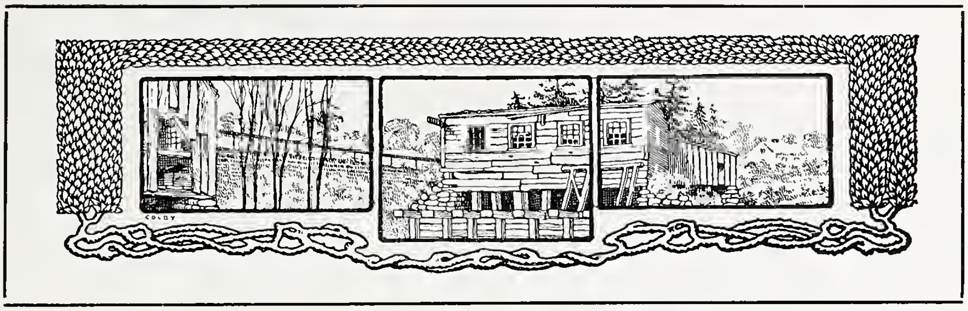
It is but natural that such a wealth of scenic beauty, of enticing climate and bracing air should attract not only the transient visitor but the permanent resident. Scattered through the groves of palm that extend north, south and west of Miami, are the homes of men of wealth and refinement who have built here where they may enjoy the rich gifts that Nature has provided. Beautiful bungalows and more pretentious mansions are set in gardens and groves of from five to fifty acres, and the highest skill of the landscape architect has been employed to enhance their loveliness.

However brilliant her past, the future of this city on Biscayne Bay has much of brilliant promise.

CHAPTER XXV

PALATKA AND PUTNAM COUNTY

BY H. A. B. M'KENZIE



PUTNAM COUNTY, FLORIDA, lies between the parallels of twenty-nine and thirty degrees, north latitude. It is bounded on the west by the eighty-second degree of longitude west from Greenwich, which places it in the center of the northern portion of the state. It contains seven hundred and seventy-two square miles of territory. It is divided by the St. Johns river which gives it more than one hundred miles of river frontage. The county is traversed by several hundred miles of other navigable streams tributary to the St. Johns, and one of these is the picturesque and romantic Ocklawaha river, over which a number of freight and passenger boats are operated. The Ocklawaha has been made famous in prose and song by writers and tourists who have had the pleasure of the rather remarkable journey over its placid waters overhung with great trees that are draped with the somber Spanish moss.

Putnam county contains a large portion of that part of Florida formerly known as Fruitland, in which was originally discovered more than a half of the entire wild orange acreage of the state. Its soil is admirably adapted to the fruits of a semi-tropical climate, to Irish potatoes, table vegetables, and small fruits which are grown in large quantities. This county produced in 1912 more than half a million boxes of oranges and grapefruit, or quite one-sixteenth of the entire crop of the state.

The county was organized as one of the units of the state government in the year 1847. It was named for one of the leading citizens of that day and time, Israel Putnam, who afterward became judge of the circuit court.

FOREST WEALTH

The interior of the county is largely covered with yellow pine forests, but it produces also great quantities of hard woods, oak, ash, maple, hickory, gum and magnolia. The last named timber grows profusely and reaches an enormous size. It is a vison of loveliness when in bloom and mingles its perfumes with that of the jasmine and orange, lading the air with an almost overpowering fragrance.

The largest camphor grove in the United States is located in Putnam county. More than four hundred acres of these beautiful trees are under a hight state of cultivation, some of them full grown and ready for harvest, and others in every stage from the sprout just showing through the earth in the nursery to the full grown tree. The camphor industry is most promising in this location and it has already been established as a commercial success.

A navigable stream which traverses the county, Dunns creek, leads to Crescent City, also within the limits of the county, and this is an important shipping point. It is located in the original Fruitland district, the home of Florida citrus fruits. The fruits shipped from this point in the 1911-12 fruit year, yielded their owners more than two million dollars.

PALATKA, THE GEM CITY

The city of Palatka, the county seat of Putnam county, has been called the Gem City of Florida. It lies fifty-five miles south of Jacksonville by rail connection, it is twenty miles from the Atlantic coast of the state and by hard-surfaced road it is about thirty miles from historic St. Augustine. It is on the west bank of the St. Johns river, which with its mile width separates it from East Palatka. The two towns are connected by a railroad bridge and by the only highway bridge that spans this mighty stream. It affords a broad passage way for vehicles and pedestrians and is cut by a steel draw, admitting the passage of river steamboats and ocean vessels, plying their way between Jacksonville and points on the river "up south," as the inhabitants describe it, for it must be recalled that the St. Johns river flows north from its source, the only navigable stream under the jurisdiction of the United States Government that takes this course.

EARLIEST HISTORY

The earliest published history of Palatka is found in Bertram's Travels, the notes of an English writer, who navigated the St. Johns in 1756. He declares that in those early days, when the Indians held sway, this beautiful expanse of water was known as the "Welaka," or "chain of lakes," a most appropriate name, for this stream has

MAGNOLIA BUD

MAGNOLIA BLOOM

but a slight and hardly appreciable current, and its width is divided by headlands into a series of lakes from two or three to a dozen miles across.

In those early days the settlement was called Pilatka, meaning in the Seminole tongue, the "crossing over," or as some authorities assert, the "cow crossing," for it is well known that in those days the river could be forded or cattle could be made to swim across it. It is also a matter of record that the swamps bordering the river were at this point divided by high ground on both sides of the stream, making the approach to it easy and safe. The name changed to Palatka in the seventies, on petition of citizens to the postoffice department, because of confusion caused by the spelling and pronunciation of the word, and here was lost its association with the musical tongue of the Seminoles.

The earliest white settler in the town of Pilatka was James Marver, who with his companions, Hines and Woodruff, came in 1820, a year after Florida was deeded to the United States by Spain. They purchased certain Spanish grants and established a trading post on the river front, where they transacted a large business with the Indians who came here in large numbers for supplies and to barter their hunting spoils, and to hold periodically their canoe races on the river at this point.

This trading post was located where now stands the station of the Florida East Coast Railway. Later these lands and the post passed to the possession of Belton C. Copp, a young army officer, and from him to Dr. Nehemiah Brush, who with his two nephews, Thomas and William Brush, conducted the business and maintained the trade with the Indians until the breaking out of hostilities which became the Seminole war. Pilatka was attacked by a band of red men late in 1835, and the store and post were burned. The Federal Government recognizing the serious situation, established about 1837, a military station here, under command of General Worth, and for several years the place was entirely military in its appearance and under military control. A large hospital and military stable with quarters for more than four hundred horses, occupied prominent locations in the town where now are handsome residences and the famous resort hotel, the Putnam House. During the years of military occupation, the post was commanded at different times by General Winfield Scott, General Gaines, General Taylor and by William T. Sherman, then a lieutenant.

MUNICIPAL INCORPORATION

Pilatka was the home of Isaac N. Bronson, associate justice of the supreme court, and it was he who obtained from the state a special charter for the incorporation of the city in 1853. Prosperity came to the little city from the time of its incorporation. Great rivalry existed between the cities of Charleston and Savannah, which brought good fortune to Pilatka. It resulted in the establishment of a line of steamers to this city, by each of these more northern centers, and they vied for the growing trade of this Florida town, and so Pilatka forged ahead and enjoyed a season of much success. The city passed through the financial crisis of 1857 with no lowering of her colors. Churches, schools, dwellings and residences were built and a confident and enthusiastic community was firmly established here.

WAR AND DISASTER

Then came the Civil war, bringing destruction and hindrance, and it was not until the construction of the Florida Southern Railway, connecting the city with the southern center of the state, that substantial growth and prosperity were resumed. The city's progress from 1880 to 1884 was remarkable. Buildings were erected in every direction from the center, lands advanced in value, new lines of steamers plowed the river, the Jacksonville, Tampa & Key West Railroad was built and many new industries, which go to make a city prosperous, were well under way. Then came a disastrous fire. The sun rose on the first Tuesday in November, 1884, on a thriving and busy city. It rose the morning of Wednesday on a heap of smoldering ruins. It brought a tremendous shock and some there were who predicted that the ruin would be complete and final. But the recovery was quick and a city arose from the ashes more substantial than ever before.

So much for the Palatka of yesterday.

MODERN PALATKA

The year 1912 saw a marked development in the erection of modern residences and the establishment of substantial and beneficial business enterprises. Thirty-five beautiful homes were completed just previous to the close of the year, besides many homes for rental purposes, for Palatka is a city whose winter population is largely increased by the advent of visitors who are attracted by its delightful climate and surroundings.

The Palatka Board of Trade found the city confronted by a problem so unusual as to lay a heavy tax upon its energies in providing suitable habitation for the rapidly increasing resident population as well as for the tourists, who throng the city each winter. New people coming in and finding no place to live, were compelled to go elsewhere. A number of progressive citizens responded promptly and have been diligent in their efforts to relieve these conditions. As a result new homes arose in all directions from the business center in which were housed the great influx of visitors and settlers.

PALATKA'S INDUSTRIAL ENTERPRISES

Palatka is the largest inland manufacturing center in the state. For years it has been preëminent in the production of cypress timber, besides cutting an immense amount of pine, in shingles, doors, blinds, sashes, buckets and pails, tanks, and vats for which cypress is especially adapted, and in the manufacture of ice, cigars and boats. Within the past two years have been added to this list several factories producing large quantities of fruit crates, fertilizers, porch columns, screen doors and window frames, barrels, staves and fruit boxes. The capital invested in these new enterprises aggregates more than a million and a half of dollars.

MERCANTILE INTERESTS

The city has recently added to its business equipment its third banking institution, a wholesale grocery, a cold storage plant of large capacity, besides a considerable number of mercantile houses of various kinds. No Florida city of its size and population has a more extensive trade from the territory surrounding it, drawing, as it does, from a radius of seventy-five to a hundred miles. Well stocked stores and business houses are increasing this trade year by year.

CHURCHES AND SCHOOLS

There are eleven churches in Palatka of the leading denominations, five of them for white worshippers and six for the colored race. All of them occupy modern and handsome structures. Three of these churches maintain educational institutions, one, St. Joseph's

Catholic Academy, and two schools for colored children supported by the Episcopal church and by the Presbyterian denomination. The county school authorities maintain two high schools, one for each of the leading races, and they have in contemplation a school building to be erected in 1914 at a cost of one hundred thousand dollars.

PUBLIC AFFAIRS

Honest and intelligent expenditure of public funds in Palatka and Putnam county has given the city and county sound and permanent development in their public utilities. The construction at this point of the only highway bridge across the St. Johns river, the new courthouse and city hall and park, the latter covering half a block in the heart of the city, and the construction of seventy-five miles of hard-surfaced roads through the county, stand as monuments to the business-like methods of city and county officials through a long series of years.

ADVANTAGES AS A DISTRIBUTING CENTER

In a traffic sense its location on the banks of the St. Johns river makes Palatka a seaboard city. It has four separate lines of railways and four steamboat lines connecting it with the outside world. In the volume of freight traffic, Palatka is the fourth city in Florida, and this secures for it minimum rates. The United States Government has appropriated half a million dollars for the further improvement of the river in this part of its course, with the idea of making this stream available for ocean-going vessels for many miles from its junction with the Atlantic.

This point is an important center for fruit and vegetable raising and shipping. Half a million boxes of citrus fruits and thirty-five thousand barrels of Irish potatoes were shipped from Palatka and Putnam county in 1912. These two products led in importance, but the cultivation of many other varieties is increasing as growers are discovering the profitable possibilities of the varied soils.

Within five years—since 1908—Palatka's population has increased one hundred percent. In these same years half a million dollars have been expended in public improvements. Miles of paved streets and sidewalks, a perfect sewerage system, municipally owned waterworks, motor-driven fire apparatus and a paid fire department, combined with the lavish gifts of nature, make the city ideal for residence, for the transient visitor and for the transaction of business. The women of Palatka through the organization of the Woman's Club, have contributed largely and unselfishly to the beauty and attractiveness of the city by their urgency for public improvements.

PALATKA'S FUTURE

Palatka's future is not problematical. Those who are in earnest and have the will to do things, find here varied opportunity for success within the limits of this city and even far outside, for the lands that surround it are among the richest and most productive in Florida. All roads that lead to the Gem City are blazoned with signs whereon are inscribed in bright letters the words: "To Palatka and Prosperity." While her progress has not always been so rapidly forward as within the past three to five years, she has never known a retrograde movement.

CHAPTER XXVI

THE EVERGLADES

IN this decade wherein the conversation of the nation's resources is a subject of almost universal interest, no extended discussion of Florida would be complete without a description of the Everglades. The region comprises a vast area covering approximately the southern one-third of the state. Included in this region lies Lake Okeechobee, the largest body of fresh water wholly within the limits of any single state in the Union, and second in size only to Lake Michigan in the United States. Stretching north, south, east and west from this lake are millions of acres of land, wet and swampy and covered with saw grass growing in pathless wastes, through much of which no man has ever found a way.

The soil is a deep black muck, the accumulation of centuries of decaying vegetation. Underlying the surface from three to six feet, sometimes deeper, is a substratum of marl, which on exposure to the air hardens into enduring rock. Scattered through this vast sea of wild grass rise occasional islands of higher ground, covered with a heavy growth of palms and other hard wood trees. Land of similar description borders the Everglade region, especially on the east. Such land is not properly a part of the Everglades. Much of it has been reclaimed for vegetable and truck gardens and fruit groves, and its fertility is productive of heavy and profitable crops.

THE DRAINAGE PROBLEM

For more than half a century men have dreamed of draining the Everglades, but not until within the last few years has the gigantic task been undertaken in earnest. Engineers have believed that the lowering of the level of Lake Okeechobee, thereby preventing its overflow into the surrounding territory, would make possible the drainage and the practical use of this territory for agriculture. They have reported that the normal level of the lake being more than twenty feet above the sea, it would be an engineering possibility to lower its level.

A way was found to finance the construction of several drainage canals through which, it was believed, the waters of the lake might be controlled, and the work was begun. The project has been backed by those who believed firmly that the ultimate results sought would be obtained in this way.

Others have opposed the undertaking, arguing that the lowering of the level of Lake Okeechobee would not bring the drying out of the surrounding lands sufficiently for agricultural purposes; that the removal of the surface water from so vast an area, would bring modifications of climatic conditions by extending the frost line over the drained area; that the soil when dried, is peaty in character and that damage by fire would be made possible, perhaps probable, in some localities. They further urged that the capacity of the drainage canals already planned, will be wholly insufficient to affect materially the water level of the great lake, and that this capacity must be increased from three to six times, at a cost far greater than has yet been provided for.

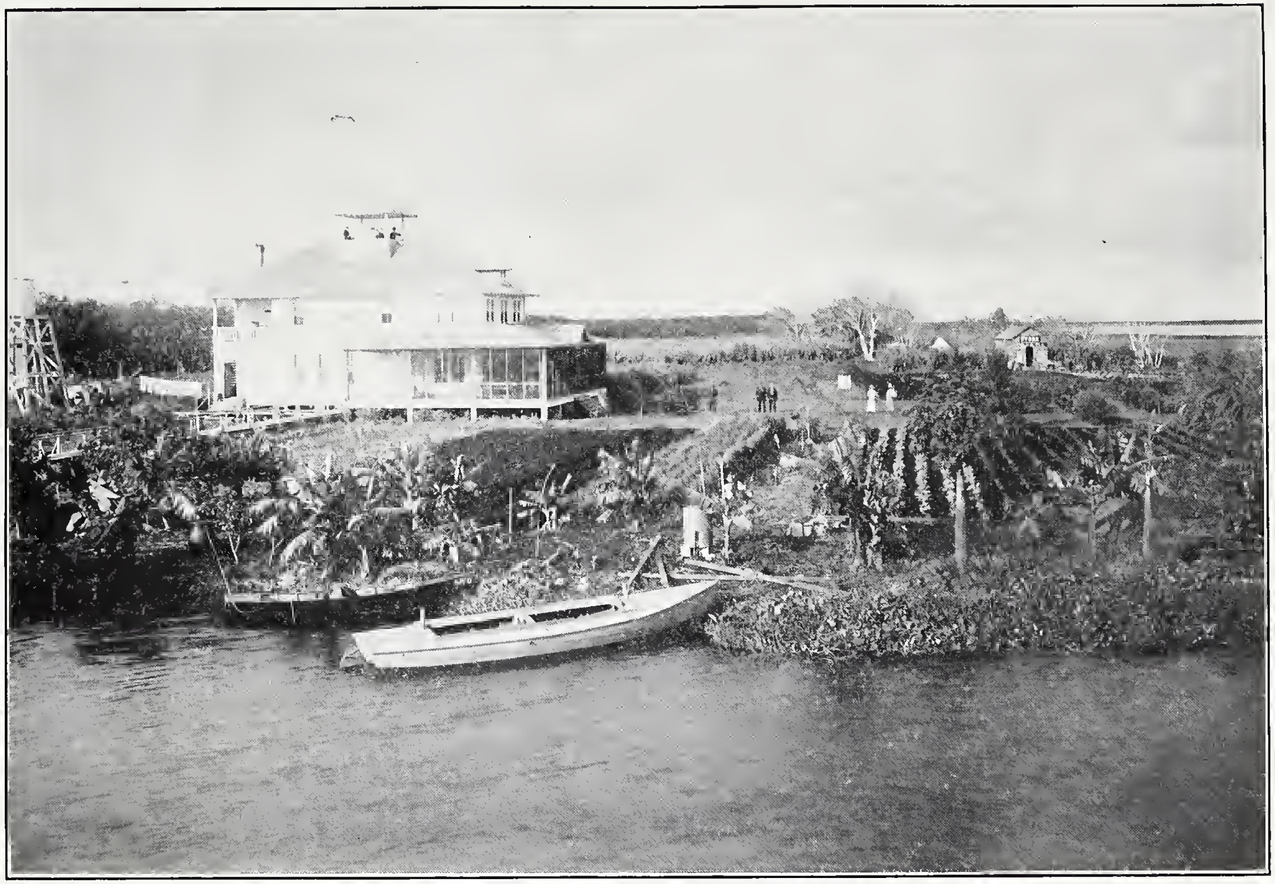
Admitting that it is a feasible engineering problem to lower the level of the lake by sufficient drainage capacity, there remain several elements which, it appears, only the completion of the work already undertaken and far on the way toward actual accomplishment, can solve. An impartial discussion of the Everglade problem, therefore, must be limited here to a history of the inception and progress of the plans for this immense drainage project.

In the American "Review of Reviews" for October, 1912, appeared an article under the title "The Everglades of Florida," by Thomas E. Will. The writer presents an accurate statement of the work, from which are reproduced the essential facts of its undertaking and progress, and omitting his optimistic conclusions as to the results, which he assumes are sure to follow its completion.

HISTORY OF THE DRAINAGE PROBLEM

"Public interest focusses today on the Everglades of Florida. This territory comprises a tract about half the size of Massachusetts. It lies south and southeast of Lake Okeechobee, in Southern Florida, and is a part of the Florida grant made to the United States by Spain in 1819.

"So far as known, the tract has always been wet. Florida was



ON THE BORDER OF LAKE OKEECHOBEE

admitted to the Union in 1845 and in December of that year, its Legislature by resolution instructed its Senators in Congress and requested its Representatives to press upon Congress the propriety and policy of forthwith appointing engineers to examine and survey the Everglades region.

"In 1847 Senator James D. Westcott, Jr., of Florida, requested the Secretary of the Treasury, the Hon. R. J. Walker, to have the lands examined. Shortly afterward the Secretary of the Treasury appointed Mr. Buckingham Smith to make such investigation and report upon it. The result was the famous Buckingham Smith report of 1848, which was published as a Senate document. This report, recently republished by the United States Senate as a part of Senate Document 89, was very favorable to the Everglades and their reclamation.

"In the same year the Legislature of Florida requested Congress to grant the Everglades to the State of Florida 'on condition that the state will drain them and apply the proceeds of the sale thereof after defraying the expense of draining, to purposes of education.'

"In the same year also, Senator Westcott introduced a bill into the Senate to authorize the draining of the Everglades by the State of Florida, and to grant the land to the state for that purpose. This bill was not passed, but in 1850 Congress passed a general swamp-land act 'to enable the State of Arkansas and other states to reclaim the swamp lands within their limits.' By this act the Everglades were granted by the United States to the State of Florida, with the following express provision: 'That the proceeds of said lands, whether from sale or by direct appropriation in kind, shall be applied exclusively as far as necessary, to the purpose of reclaiming said lands by means of the levees and drains aforesaid.'

"Thirty-one years, however, passed before the state made a serious attempt to drain these lands.

"On February 26, 1881, the trustees of the Internal Improvement Fund, having charge of the state's wet lands, entered into a contract with Mr. Hamilton Disston, of Philadelphia, and others, in which it was agreed that Disston and his associates would drain and reclaim, at their own expense and charge, all the overflowed lands of the State of Florida lying south of township 23 and east of Peace creek, belonging to the State of Florida or the Internal Improvement Fund. Mr. Disston worked on this drainage task for about eight years, draining certain elevated lands in the Kissimmee territory and cultivating them.

TOPOGRAPHY OF THE EVERGLADES

"A word as to the topography of the Everglades and the reasons why they are wet. Lake Okeechobee is the center of the problem. It may be compared to a great tank on top of a gently sloping roof. On the lower edge of the roof is an elevated rim. Let the tank be filled with water. When more rain falls it will overflow, run down the roof and be checked by the rim.

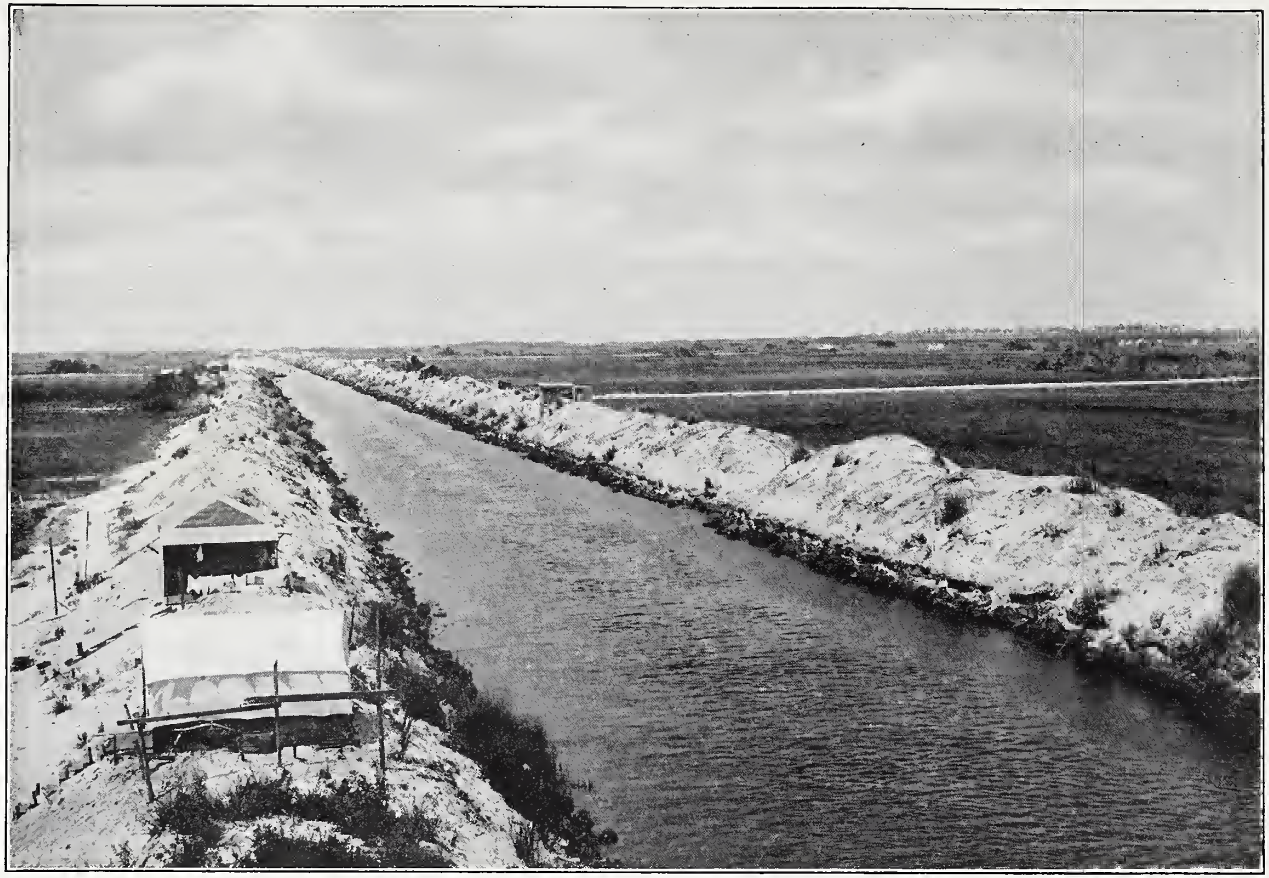
"Lake Okeechobee, covering about a half million acres, receives the waters from an area seven and a half times its own size. The lake has no outlet. It fills in the rainy season and then overflows, the water flowing over the great prairie. Before it reaches the ocean, however, it encounters the rock rim of coraline limestone. This retards the outflow of water into the ocean. Through this rim the water has cut passages, but not enough to release the entire volume of water until the next rainy season has arrived. Then the lake overflows again. Thus the prairie between lake and ocean is always more or less wet.

"It seems the drainage work was first attempted by the Spaniards. Then came the Disston enterprise, and then, early in the present century, the latest effort.

THE STATE SYSTEM OF CANALS

"Everglades drainage is in charge of the State of Florida, through its Internal Improvement Board. Its plan is to connect Lake Okeechobee with gulf and ocean by canals. These are to lower the lake level from its present height of twenty and four-tenths feet to sixteen feet. Thus a great drainage reservoir is to be created to receive the inflow from the north plus the rainfall, emit it gradually through the canals to gulf and ocean and thus prevent the overflow.

"Under Governor W. S. Jennings (1901-1905) plans for this drainage work were laid. Under Governor N. B. Broward (1905-1909) the actual ditch-digging began. Governor Broward asked the United States Department of Agriculture for expert advice. J. O. Wright of the drainage division was sent to examine and report on the tract, which he did. He mapped out a system of canals which with slight modifications, is now being installed. For the past two years Mr. Wright has been in the employ of the state as its chief drainage engineer. The dredging was first done by the state. Since



A DRAINAGE CANAL EXTENDING INTO THE EVERGLADES

July 1, 1910, it has been in the hands of the Furst-Clark Company of Baltimore.

"Just how much canalizing will be necessary? Here the doctors have slightly disagreed. Broward's plan was that of 'cut and try.' Lay out and cut a system of canals. If these do the work, well and good. If more are needed, cut more. As for funds no serious problem arises. The state drainage is financed from two sources: first, an annual tax of five cents upon each acre benefited; second, the proceeds of the sale of state lands.

"The present canals include the following:

"First: On the west, one connecting Lake Okeechobee, through Lake Hicpochee with the Caloosahatchee, thus discharging 'Glade waters into the Gulf of Mexico. This canal has been open and navigated for two and a half years.

"Second: On the southeast and east, a series emptying into the Atlantic. They are. (a) The North New River or Middle Canal. This connects the north branch of the New River on which Fort Lauderdale is situated, with Lake Okeechobee. This canal is cut through. (b) The Miami or South Canal. This is to connect Miami with Lake Okeechobee. (c) The South New River Canal, running east and west to connect canals (a) and (b). (d) The Hillsborough Canal. This lies north of New River Canal, and will connect Hillsborough with the lake. (e) The Palm Beach Canal. This has recently been determined upon by the state. It will connect Palm Beach with the lake. Work on this has not yet been begun.

"The plan further includes several smaller canals and scores of miles of lateral ditches, good beginnings on which have been made.

"On the main canals the dredging company is operating nine dredges, drill boats and the like, night and day. It is bound by contract to have its work finished by July 1, 1913, and is understood to be well along with its schedule, 59.6 per cent of the entire estimated yardage having been excavated on June 30, 1912.

USE OF THE CANALS

"The question is sometimes asked whether the drainage plan contemplates the emptying of the lake. The answer is an emphatic NO. The lake is an invaluable asset. Water, in general, is an indispensable resource and the water of Lake Okeechobee is for several reasons peculiarly valuable:

"First: The lake is an inland sea, containing vast numbers of excellent fish. It is capable of bearing the vessels of future commerce. In addition, it will undoubtedly become the center of a far-famed pleasure resort which the Palm Beach of today faintly foreshadows.

"Second: The lake is an important factor in the modification of climate. As a protection against frost, its value is beyond estimate.

"Third: The lake is the great reservoir for the supply of water to the 'Glade region. This water is needed, first, for the canals. These have already become highways between ocean and gulf. What they will mean in future as means of transportation may be inferred from the part played by the canals of Holland and our own Erie canal.

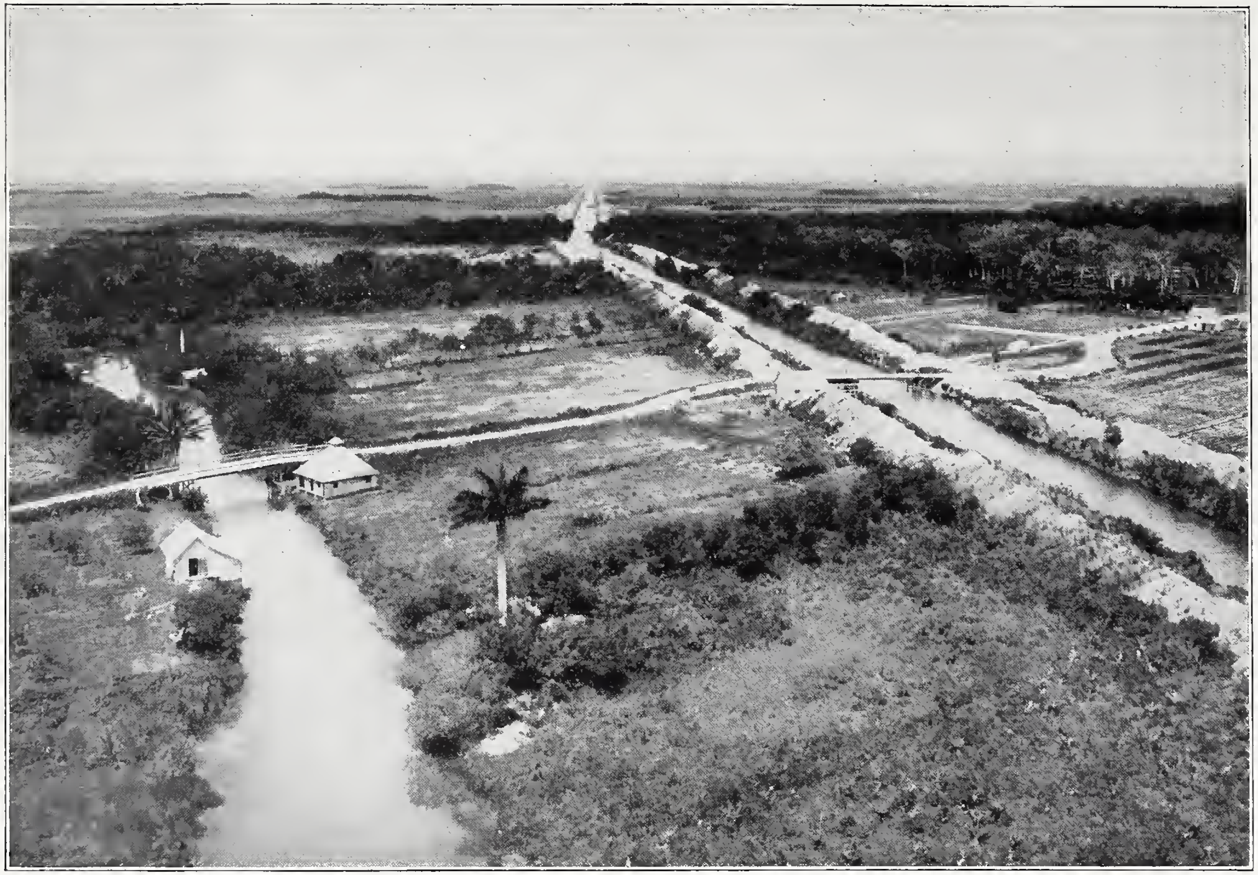
"Again, the lake water is needed to supplement the rainfall. This, it is true, averages in the 'Glade region some fifty-seven inches per annum. Still, here as elsewhere, there are times when additional water is helpful, perhaps priceless. Laterals are being cut from the main canals into the land. Sub-laterals branch off from these. By means of locks in the canals and gates in the laterals and ditches, the height and flow of this water can be controlled. It passes horizontally through the loose, porous soil as through salt or sand, and capillary attraction brings it up to the plant roots. From the standpoint of sub-irrigation, the 'Glade region, if made to order, could hardly have been improved upon. State legislation, providing for systematic control of the height of the water table, is advised by competent engineers.

TEMPERATURES IN THE EVERGLADES

"Mention has been made of frost. The Everglades are, in this regard, peculiarly blest. They lie in a region more nearly free from frost than any other in the United States. The Weather Bureau's Bulletin V on 'Frost Data of the United States' carries maps on which, right across the Everglades region are inscribed the words, 'Frost at rare intervals only.' Cocoanuts, among the most sensitive of all trees to frost and cold, abound on the rim in the vicinity of Miami and Fort Lauderdale. Again, the excessive heats which might be expected in the far south are also conspicuous by their absence, the mercury at Miami having registered the maximum of 96 degrees of temperature but once since records have been kept in that vicinity.

HEALTHFULNESS OF THE EVERGLADES

"The healthfulness of the region is an object of remark. Lieut. Christopher R. P. Rodgers, of the United States Navy, said in



LOOKING INTO THE EVERGLADES ALONG THE MIAMI DRAINAGE CANAL

1848, 'After observing the climate of the Everglades at every season, I consider it one of the most healthy in the world.' State Chemist R. E. Rose, of Florida, speaking of the agricultural work in the 80's on the reclaimed lands of the Disston Company, north of the lake, said, 'During a period of over eleven years, the company never employed a physician nor lost an employee from death.' Similar testimony abounds.

"The location of the Everglades territory is exceptional. A glance at the world map shows the peninsula of Florida jutting straight out into the ocean to the southeast. The Everglades tract is but three degrees north of the Tropic of Cancer. This puts it on the parallel running through or near the Nile Valley, the Persian Gulf, Benares, the Holy City of India, the Sandwich Islands and the mouth of the Rio Grande—in a word, through the regions where human life first took root upon the planet."

CHAPTER XXVII

FLORIDA'S INDIAN TRIBE

THE part played by Indians in the history of Florida has been eventful. The Indians were the first to greet Ponce de Leon as he touched the main land four hundred years ago. His first task, after erecting the standards of Spain on the soil of the newly discovered country and rendering thanks for the safe outcome of his adventurous voyage was to placate the natives. De Soto and other Spanish adventurers and explorers fought their way through hundreds of miles of wilderness, opposing and opposed by hostile tribes, killing and burning and robbing. In later decades when the Spanish and English strove for supremacy, the Indians were allied first with one and then with the other side, and with both they committed horrible ravages. When Florida became a part of the United States the Indians continued to be a menace to the peaceful development of the country. These troubles, more or less continuous, culminated in the Indian war, which cost the United States Government fifteen hundred lives, twenty millions of dollars and eight years of time—one of the greatest wars ever maintained by the Federal Government against the native occupants of the land. It was ended in 1842 by the retirement, or banishment, of the hostile red men into the fastness of The Everglades. There they have remained since that time, with a few unimportant outbreaks against the whites in the decade following the ending of hostilities.

The Indians remaining in Florida after the close of these wars, were the Seminoles. The original name was "Seminolee," meaning in the Indian language, "runaway," or "renegade." The title was applied to the tribe by the sections from which it separated, the Cherokees and Creeks of Alabama and Georgia. The Renegades came to Florida at an early date. They were here when the followers of Cortez wandered across the country from Mexico and they were mentioned by the writers of that period who returned to Mexico in 1519.

OPPRESSED OR AGGRESSORS?

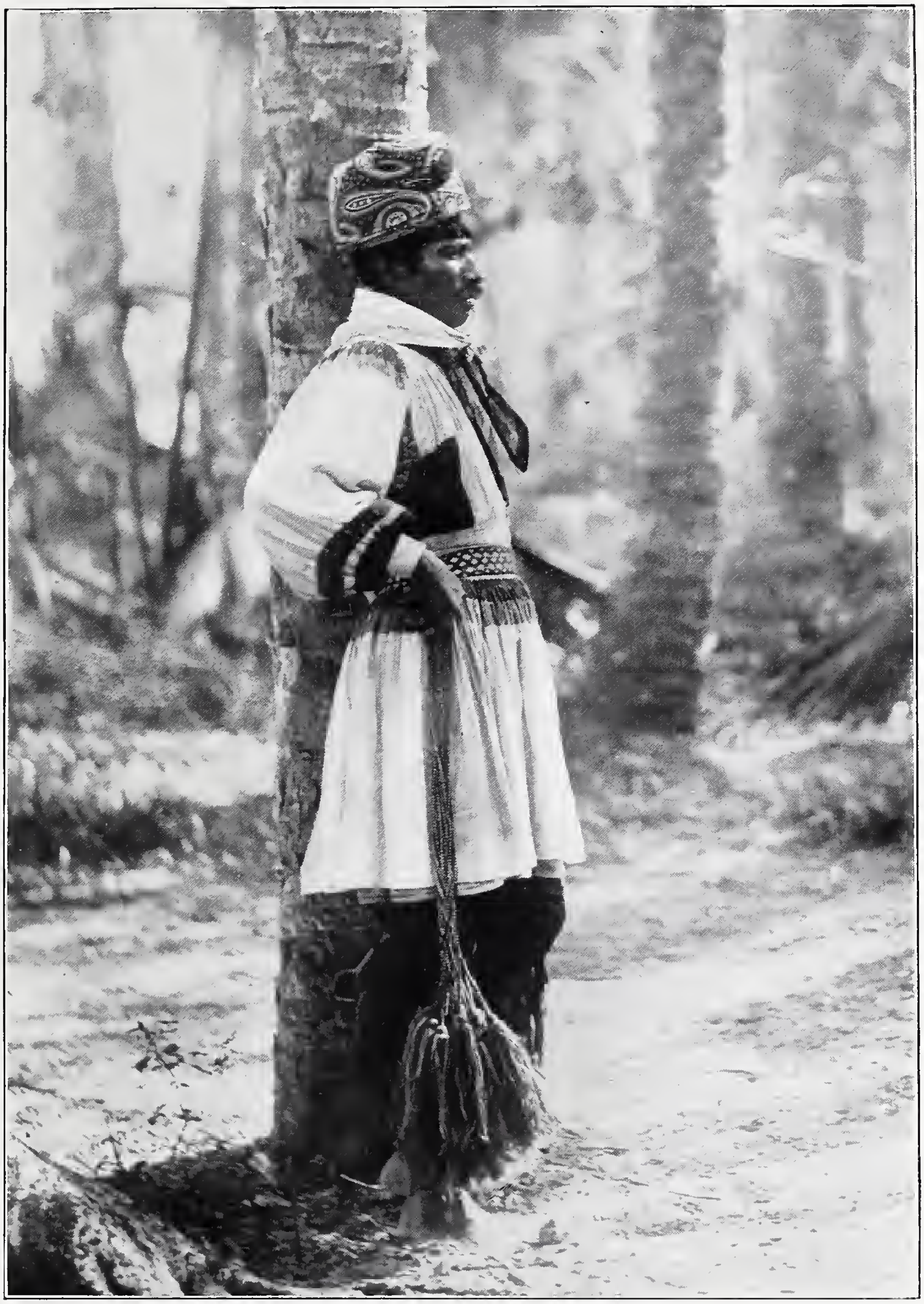
The Indians in Florida have been regarded by subsequent writers, and indeed by those of the present day, from different viewpoints. One regards them as the victims of broken promises and unfulfilled contracts which had been made by the United States Government. As a recognition of their rights as the original occupants of the land, the Federal Government, it is claimed, entered into contract by which the Indians in Florida were to be given certain extensive and well defined reservations, and were to receive an annuity sufficient to supply their needs in connection with unrestricted rights to hunt and fish within the reservation. These promises, it is claimed, have never been fulfilled and the Seminoles, therefore, are regarded as having been greatly wronged by the Government.

Another view contemplates the Seminoles as aggressors, for decades disturbers of the peace of Florida, delaying its development by their ravages and murderous forays. It considered that the tribe was being treated with more consideration than its due when they were allowed a home, even in that part of Florida which then, it was believed, could never be of use for the purposes of industrial development.

SEMINOLE RETICENCE

Without undertaking to judge between these two views, a description of the Indian occupants of Florida today is interesting. In all recent history of the state, the Seminoles have kept aloof from contact with the whites. The taking of the decennial census among them has been a difficult undertaking, but there are believed to be about four hundred members of the tribe. Many efforts to civilize them and to bring to them the benefits and comforts of civilization and even of religion, have been received with scant cordiality. Apparently they prefer not to be molested by efforts to civilize and Christianize them. They have received, but have profited little, by attempts to educate them. No Government reservation has ever been set aside for them in Florida, but under an Act of the Legislature of 1913, an Indian Commission was created to investigate and to secure reliable information regarding their affairs. There is already an agent of the National Government among them and a station at Fort Myers, so that it appears that they are looked after at least as well as are other wards of the nation in other parts of the country.

The Episcopal Church for years has had a resident missionary



BILLY BOWLEGS, A PRESENT DAY CHIEF OF SEMINOLE INDIANS IN THE EVERGLADES

Believed to be a direct descendant of the famous Chief Bowlegs, leader in Seminole wars

among them. Bishop Gray, of the Southern Diocese of Florida, has been a frequent visitor among them, preaching, advising and counseling them, and with a resident representative of the Woman's National Indian Association, the Seminoles have not been deprived of any influence that might lead them to Christianity and civilization.

AVERSION TO CIVILIZING INFLUENCES

Buildings have been erected for their use as church and school houses, and efforts have been made to give them technical education. Blacksmithing, gardening, sewing and other household arts have been open to them and their material progress has been fostered as a stepping stone to something better. A few of their women have learned to operate sewing machines, to use gasoline stoves and a few ordinary cooking utensils. Rifles and knives are their weapons.

But the Seminoles do not adopt the English language, nor have they appropriated as their own any of the teachings laid down by spiritual advisers. They seem to have selected from what was offered them, what they liked best and what they think they need, and the rest has gone unappropriated.

This proffered aid from various sources has been at their command for years, and it has never been withdrawn; therefore, it must be concluded that the efforts to civilize the Florida Indians have been somewhat of a failure. The history of the red man in America would indicate that it is likely never to be a success. For centuries he had a continent in undisturbed possession in which to work out his own salvation. Yet with all this opportunity he has never achieved by himself any advance in art, literature, music, or even in a written language. Even his law is but tribal custom. It is to be noticed that the Seminole is making none of these attempts for himself. For nearly three hundred years he fought to retain his hold on Florida, and he resisted attempts to remove him to the western reservations provided for him. But he is asking nothing from Florida today, and there is no indication that he feels the need of anything that the state could give him. He has never been a factor in its development. With rare individual exceptions, whatever education he has received from friends has been merely an unsuccessful experiment, for as soon as he returned to associate with his tribe, the veneer of civilization usually has speedily worn off.

In his religion the Seminole is at least consistent. He reverences the Great Spirit—Soctomassee—who sits above the clouds, and who takes care of good Indians when they die. Locosomo, the Spirit of Evil, roams the swamps to tempt and lead astray.

SOCIAL CUSTOMS

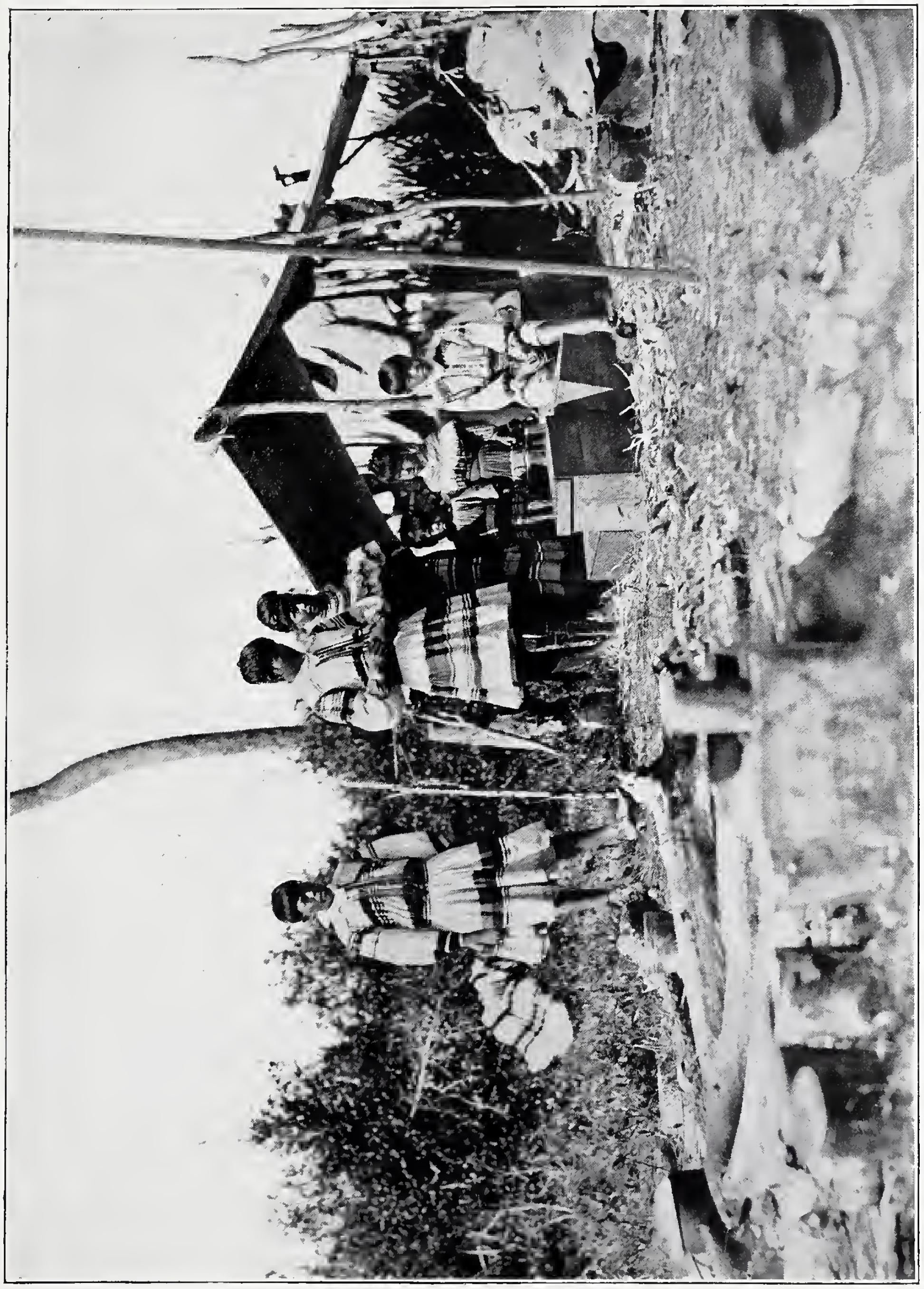
There is no wedlock outside of the race and the marriage ceremony consists of a public declaration. The bride has been "raced for" at the previous Green Corn Dance, which takes place during the week of the June full moon. She is given such a start in the race that she is not caught if she does not care to be. The children belong to the mother and she may decide the fate of a cruel husband or of one who neglects her children. The children are taught the strictest obedience to and respect for the aged. The married women only are permitted to wear the girdle of disks across the breast, made of silver coins and hammered to extreme thinness.

The women are lithe and well formed. They dress in gaudy calicos. The waist and dress skirt do not always meet at the waist line, leaving exposed several inches of red skin clear around the body. The hair is worn in a knot at the top of the head and banged over the forehead. The men wear a queue, which is a mark of dignity and they must not appear before their chief without it.

Her necklaces of beads represent to the Seminole woman everything that is worth while to her. The mother begins by putting a string of these glass ornaments about the neck of her baby girl. As the child grows older, string after string is added until she carries several pounds of them. When the woman passes middle life she begins to take them off, until but one necklace remains, and then the squaw is too old to work. She is called upon for nothing. She lives with the different families of the camp, always befriended and well cared for. The sick and orphans are treated with special care.

SEMINOLE WOMEN

The women have the reputation of being clean, industrious, and are said to be models of chastity, departures from virtue being punishable by death, inflicted by the squaws themselves. An offender is taken from home, tied to a tree and left to her fate. The skeleton is never removed from the tree but is left as a warning to possible future offenders. They bury their dead near their settlements. They speak of them as "gone to the Great Spirit." Of their religious beliefs and forms, whatever these may be, but little is known.



A SEMINOLE CAMP

The home-making, if it may be called that, devolves upon the squaws. They cook, wash, plant and gather the crops and when the camp is moved, the women carry everything but the rifle. In their half cultivated fields, they raise corn, pumpkins, potatoes, peas, chickens and hogs. They are expert fishers and kill what game they need for their own uses, probably paying very little attention to Florida's complex game laws. It may be said of the Seminoles, however, that they do not wastefully slaughter game, but kill only what they may need for their own maintenance. It is said that they continue to hunt and kill egrets for the much coveted plumes. The demand for the plumes of the bird is a strong temptation to violate the law.

VANITY A TRIBAL INSTINCT

The men dress in anything but artistic fashion. A crude mixture of gaudy colors or an occasional ready-made suit accentuates the Seminole's inability or his unwillingness to assimilate readily anything that belongs to the white man. The men dress in ready-made clothing, what there is of it, a shirt and vest with red bandanna handkerchiefs. The shirt is unconfined, the vest is worn in the usual way, and the highly colored kerchiefs are attached to the person wherever they will show to the best advantage—around the neck, around the arms, through the buttonholes of the vest and sometimes torn into strips and stitched, with many rows of colored threads about the lower end of the shirt.

The head dress is an elaborate hat or a turban, the frame of which is made of bamboo twigs and covered with fold upon fold of bandanna handkerchiefs. Occasionally trousers are worn and frequently, well made moccasins and leggins of deer skin.

The usual camp is composed of five or six families, under one head. Each family in the camp has its own palmetto-thatched hut, the floor of which is two or three feet above ground, made of rough timbers and covered with deer skins. Three sides of the hut are thatched, the fourth being left open for light and ventilation, but a canvas curtain is provided to exclude rain and cold.

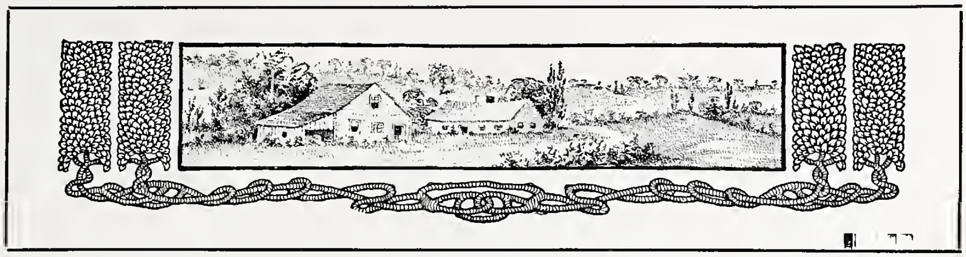
PICTURESQUE LANGUAGE

With all their unprogressiveness, the language of the Seminoles has contributed largely to the nomenclature of Florida. Words from their language have been applied to rivers and bays and various locations throughout the state, which will remain for all time as a memory of the original inhabitants of the great peninsula. Probably these Indians are the superior of all other Indian races in America, the best physically, intellectually and morally. The Seminole is healthy, industrious in his own way, moral and just. He is kind to his women and children, usually honest, proud and devoted strictly to tribal custom as it has been handed down from his forefathers. He treasures the memory of the great Chief, Osceola, whose descendants are high in the scale of Seminole aristocracy.

He is in nobody's way, he is inoffensive, the tribe is not multiplying as rapidly as it is decreasing; and the remnants of the once great nation are decidedly picturesque from an ethnological viewpoint, and as a vanishing racial type.

CHAPTER XXVIII

CONVICT LEASE SYSTEM



A SYSTEM of leasing the labor of the state's convicts to the highest responsible bidder exists in Florida. No story of social conditions in the state that omitted reference to it could fairly be considered complete. It is the outgrowth of circumstances that surrounded the labor supply question and of conditions peculiar to many southern states in years gone by. It has been abolished or modified in some of these commonwealths, but it remains in Florida. It is but fair to say that its continued existence is against the best sentiment of a large majority of Florida's citizenry and that, as a state institution, it is likely to be abolished at the expiration of existing contracts, or as soon thereafter as provisions can be made for the proper care in other ways of the state's criminals.

The inauguration of the system in this state was based upon three preliminary facts:

First, in the great peninsula state, as everywhere else, it is recognized that the best results to the public and the highest moral and physical interests of the prisoner himself demand that he be employed at steady, systematic and productive labor.

Second, in Florida, as in other southern states, climatic and industrial conditions require that the convicts be worked in the open air to the largest possible extent.

Third, in Florida, also as in other southern states, the larger proportion of the prisoners are negro men, usually ignorant and unskilled to perform any but the simplest forms of labor and but little that requires any considerable exercise of intelligence.

DEVELOPMENT OF THE LEASE SYSTEM

In her earlier history Florida cared for her criminals and her insane at the State Farm at Chattahoochee. The mentally deranged were separated from the moral deficients and the expenses of maintenance were met, in part, by the labor of the prisoners themselves in the state-owned fields. The growing population of the state and the increasing demands upon the capacity of the institution at last made necessary the expense of its enlargement, or something else.

There was a call for labor far greater than the supply in some parts of the state, especially for the development of the phosphate mines which became commercially important about 1890. The result was a proposition to sell the convict labor. Its acceptance would bring an income to the state instead of an annual deficit, and eventually the state's prisoners, white and black, male and female, were transferred to lessees who employed them in the phosphate mines and in turpentine and lumber camps throughout the state.

The leases were made under rather loosely drawn contracts, which prescribed the hours of labor, the guarding, feeding, housing, clothing and the treatment to be provided by the lessees. The right of inspection at all times by state officers was reserved. In spite of these provisions, the character and inclinations of individual employers and guards too often determined the conditions in which convicts worked and lived, and it is not surprising, in the light of later experience, that the system made possible some, even many, abuses. It was said that five years in the phosphate mines was equivalent to a death sentence.

REFORMING THE SYSTEM

Occasional reports of abuses in the convict camps aroused public sentiment for a change of the system itself and eventually for its abolishment. The State Legislature in the late 90's inaugurated a reform and subsequent enactments have modified former conditions almost beyond recognition. And with these enactments have been taken the preliminary steps toward the establishment of a state farm, where at first the female and invalid male prisoners, and ultimately all the state's prisoners shall be cared for by the state itself and where the labor of the convicts, so far as possible, shall make them self-supporting. The farm at Chattahoochee has been given over wholly to the care of the insane and this class of the state's charges has been forever separated from the criminal element. Already fifteen thousand, six hundred acres of excellent land in Bradford county have been purchased for the purposes of the convict farm, and it is intended that the necessary equipment shall be added as soon as legislative appropriations shall become available.

The present delay in carrying out this plan is due largely, if not entirely, to the large expense involved in the undertaking. The change means the loss of an annual income from the leased prisoners of about three hundred thousand dollars and substituting therefor an expenditure estimated to be between eight hundred thousand and one million dollars for the enlargement and equipment of the farm, besides an annual outlay from state funds of many thousands additional for the care of the prisoners, aside from the income from the farm created by their labor. Florida is rich today mainly in its undeveloped resources and its expenditures for the present must necessarily be upon a more modest scale than may be afforded by some of the sister states.

PROPOSED LEGISLATION

The State Legislature at the biennial session of 1911, passed a bill abrogating the lease system after December, 1913, the expiring date of all existing contracts. It also provided that the convicts should be worked upon the public roads of the state, following the plan adopted by the State of Georgia. This bill was vetoed by Governor Albert Gilchrist, then the executive of the state, who pointed out certain defects which in his opinion, would defeat the purposes sought to be accomplished. The Legislature also declared by resolution that no further leases of the prisoners should be entered into before the gathering of that body, in April, 1913.

METHODS OF ADMINISTRATION

The administration of the penal system of Florida is committed to the Board of Commissioners of State Institutions, which is composed of the Governor, the Secretary of State, the Comptroller, the Attorney-General, the State Treasurer, the Superintendent of Public Instruction, and the Commissioner of Agriculture. The last named is made the administrative and executive officer in charge of the state's prisoners. The successive occupants of the office have been progressive in their prosecution of these duties. Without exception, it is believed, their personal convictions have been against the system and for its abolishment, while as officials they have used every means in their power to ameliorate the conditions under which the prisoners worked until another system should be established.

Their ideas have involved recognition of the fact that, although convicted of crime, a prisoner has still an immortal soul and is possessed of certain inalienable rights which no authority of law may take way; that while the primary purpose of punishment is for the present protection of society, an essential feature of it should be made the possible reform of the criminal for the protection of society in time to come and for the moral betterment of the criminal himself; and that the infliction of punishment in a spirit of revenge upon the evil doer and tending to degrade him to lower levels in the moral scale, reflects a baleful influence upon society itself.

PROVISIONS OF PRESENT CONTRACT

In recognition of these principles the form of contract under which the prisoners have been leased provides, item by item, for their humane treatment, for reasonable hours of labor, sufficient and wholesome food, comfortable and hygienic housing and clothing, and generous medical attendance. It has provided for a most careful investigation of the characters of the sub-lessees of convict labor; it has insisted upon the highest recommendations as to the personal characters of the guards and others who have the immediate care of and contact with the prisoners, requiring an oath from each for the faithful performance of duty; and it has established a system of most thorough and frequent inspection of all hospitals, camps and stockades where the prisoners may be confined or worked. Whatever abuses may have crept in, have come in spite of the strenuous and continued efforts of the Commissioner of Agriculture and his executive staff to prevent in the administration of an honest contract.

All the state's prisoners at present are leased to one corporation, The Florida Pine Company. This company, in turn subleases to other individuals, persons or corporations which employ the labor in the turpentine camps; a few are worked in lumber camps, but no longer are they required to work in the phosphate mines. The company's affairs are directed by men of high moral character and business responsibility, whose administration of their duties, it is only fair to believe, is guided quite as much by the instincts of humanity as by economic principles. The company by its agreement with the state becomes a quasi partner in this important public duty, and it works in entire harmony to enforce the proper treatment of these wards of the state.

HUMANE PRINCIPLES RECOGNIZED

An outline of the contract existing between the state and the company will give an understanding of the convict lease system and its administration in Florida today.

The term of the contract covers the calendar years 1910, 1911, 1912 and 1913. By its provisions the company has charge of the prisoners from the beginning of their respective terms of sentence until they are discharged from custody by the expiration of their sentences, by pardon or death. It receives them at the county seat of the county in which they have been tried and convicted and it transports them at its own cost to the receiving camp near Ocala, where is located also the Central Hospital. Here each prisoner is examined by the physician in charge of the hospital, as to his mental and physical health and his ability to perform "reasonable labor." This physician is appointed by the state and paid by the company. His decision is final and if the prisoner is pronounced fit for such work, he is assigned to a sub-contractor who sends him to the turpentine camp or the lumber mill.

The company's physician also makes a thorough physical measurement of the prisoner similar to the Bertillon system, noting weight, personal marks and peculiarities. He has made two photographs, one front and one side view of the face, and these are filed with the name, the record of the crime, the term of sentence and the serial number which each prisoner bears. A copy of these records is forwarded to the Commissioner of Agriculture at Tallahassee. Females and invalid males are exempted from the general provisions of the lease and are cared for as described later.

CAMP EQUIPMENT

At the camps where the prisoners are kept and worked, suitable buildings for their accommodation must be provided, as approved by the Commissioner of Agriculture. Proper ventilation and sanitary surroundings are insisted upon and where it is possible, flowing water is carried to every part of the camp for domestic purposes, for bathing and for flushing closets and sewers. In practically all the camps in the state this water system has been installed, inasmuch as steam power or windmills are available for raising and distributing it.

It will be borne in mind that no female prisoners are allowed in the camps or stockades, which simplifies greatly the care and discipline of the male convicts. It is provided also that the white and negro convicts shall be kept separate in their eating and sleeping, and that they shall not come into contact in their working hours.

HOURS OF LABOR

The hours of labor are regulated by the provision that the convicts shall not "be worked or made to labor before sunrise nor after sunset, nor more than ten hours in any one day, or be made to work on the Sabbath day, provided that the lessee may, if agreeable with the prisoner, make an arrangement for doing of extra work by such prisoner at a reasonable compensation," the terms of each individual agreement being approved by the Commissioner of Agriculture. It is the custom in many of the state camps to stop work at noon on Saturdays, giving a half-holiday each week in addition to the rest on Sunday.

Each prisoner must be furnished with a separate bed not less than three and a half feet wide and six and a half feet long. Each bed must be equipped with a good mattress and pillow, three pillow cases, four sheets and two pairs of blankets. The contractor is required to have on hand at all times for each prisoner in his charge not less than three suits of clothes of the regulation striped pattern, three suits of underwear, two pairs of shoes, two nightshirts and one hat. Every prisoner is compelled to wear the prescribed stripes. Ample toilet and bathing facilities are provided and each convict must take a complete bath at least once each week, besides bathing his hands and face before each meal. He is allowed and encouraged to take a bath as often as he desires. For this purpose a large bathroom is equipped with substantial tubs, towels, soap and a plentiful water supply.

The contractor is required to employ for each camp a physician of "skill and ability," to visit the camp whenever his professional services may be required for the treatment of the prisoners.

TRACKING ESCAPED PRISONERS

For the safe keeping and care of the prisoners the lessee must employ a captain of guards and a "yard man" in each camp or stockade. In addition, a guard corps of not less than one man for every five prisoners, worked in the woods, must be maintained, and one mounted guard and two well trained bloodhounds for every twenty-five prisoners, worked in the woods. Each member of the guard force is armed with a Winchester rifle. He may be employed only after a rigid investigation of his character, substantiated by testimonials and after subscribing to an oath for the proper performance of his duties. His appointment must be approved by the Commissioner of Agriculture, who has also the power of removal. No guard may permit a prisoner to approach him nearer than thirty feet and under no circumstances is he allowed to strike or in any way to discipline a prisoner. His duty is to report infractions of rules to the captain of the guard. Punishment may be administered only by the person appointed for the purpose.

CULINARY DEPARTMENT

The "yard man" is a sort of housekeeper for the camp within the stockade fence which surrounds it to the height of twelve to sixteen feet. His duties include the ordering and inspection of all food, superintending its preparation for the tables, planning the bills of fare which must be abundant and varied, a constant supervision of the dining and sleeping quarters and of the kitchen and laundry, to keep them always clean and in sanitary condition. He also has charge of the vegetable garden which must be kept up to provision the table of each camp.

In case of the escape of a prisoner from the custody of the lessee, he is required to use every means for his recapture and the company must offer and pay a reward of one hundred dollars for his return to camp.

WHAT THE STATE RECEIVES

Under the present contract with the state the company pays for the labor of each convict at the rate of $281.60 a year. The state reserves the right to withdraw all female and all invalid male prisoners, "who from any cause may be deemed unable to perform reasonable manual labor," and from the date of such withdrawal, which was made when the contract became in force, the company agreed to pay for each prisoner remaining in its custody an additional fifteen per cent, a total of $323.84 a year.

For the female and invalid male prisoners thus withdrawn from the operation of the contract, the company pays nothing, and it maintains them free of cost to the state at its farm of fourteen hundred acres near Ocala, or it cares for them in the Central Hospital which adjoins the farm. The labor of those who are physically able, is expended upon the farm and it is the only source of income for the self-support of these prisoners. Necessarily it is small when compared with the cost of maintenance.

PUNISHMENT OF PRISONERS

In the punishment of refractory prisoners the state protects their interests to the farthest degree possible in the circumstances. It is obvious that some method of enforcing discipline is imperative, especially among the ignorant and depraved classes from which the prison corps is recruited. The state holds out the reward of large reduction of the terms of sentence for good behavior. This ranges from one month and twenty-one days from a one-year sentence, to two years, ten months and eight days from a twenty-year sentence. Any necessity for discipline may lessen the allowance of "good time" which the convict may earn and the incentive is toward proper and orderly conduct.

Severe and excessive punishment is an economic waste, for it tends to incapacitate the prisoner for the performance of his work, besides arousing an ugly spirit which may lead to more serious troubles. As noted already, no guard is allowed under any conditions to strike a prisoner. The sole method of discipline is the lash. Only one person, usually the captain of the guard, is permitted to use the lash and he is required over his own signature to report once each month to the Commissioner of Agriculture, the name or names of the prisoners whipped by him, the nature of the offence and the number of blows inflicted. Any appearance of excessive punishment is investigated immediately by the commissioner. No convict refusing to work on account of alleged illness or physical injury, may be punished until he has been examined by the physician in charge, who determines the reasonableness of the excuse.

THE USE OF BLOODHOUNDS

Bloodhounds are used for tracking escaped prisoners. For those who are acquainted with the nature of the animal employed for this purpose, the idea loses much of its repugnance. It is not ferocious by nature. Its keen sense of smell alone makes it useful. It tracks the prisoner for hours, even for days, and when it locates him it sounds the alarm, guiding the human followers to the quarry.

Commissioner B. E. McLin, under whom the convict system in Florida was cleansed of its worst abuses, said of the bloodhound: "Many, very many prisoners, working in the open as they do, have attempted to escape, but with the aid of the bloodhound have been soon tracked and recaptured. But in no instance have I ever heard of such a thing as one being hurt by a bloodhound. The hounds only serve to inform the pursuers of the route the fugitive has taken and when he changes his course. The negro's fear of the bloodhound trailing keeps many in camp that otherwise would hie themselves off to freedom."

INSPECTION BY STATE AUTHORITY

The system of inspection of the prison camps and stockades is carried out by the prison physician, whose duties take him to every camp in the state; and a supervisor for each of the four districts into which the state is divided for this purpose. The Physician to State Convicts, as his title runs, is employed in addition to the surgeon at the Central Hospital. This officer has a general oversight of all conditions that affect the prisoners from the sanitary and health viewpoints.

His report for the year 1910 called attention to the isolation of advanced tubercular patients in the Central Hospital and the handling of milder cases in the woods, giving as his opinion that the disease is decreasing among Florida convicts. He made, however, a most startling declaration regarding certain other health conditions. " I find," he said, " that the great majority of colored prisoners sentenced now are physical wrecks, and the prevailing cause so far as my investigations have gone, is syphilitic affections. I find at least seventy-five percent of the colored prisoners with syphilis in some of its stages."

He noted a strong tendency toward improvement of these conditions with proper medical treatment, good sanitary surroundings, open air, regular work and habits. His statements afforded a remarkable confirmation of physical conditions known from other sources to be common among the lower strata of the negro race throughout the south.

Dr. S. H. Blitch, surgeon at the Central Hospital, in his report of the same year, spoke of this infection in the following words: "Syphilis, the scourge and awful enemy of the negro race, is making rapid increase, the greater part of the subjects detained in hospital being syphilitics, and aside from tuberculosis, almost every death in hospital is due to the remote effects of syphilis."

The reports of these physicians, both of them trained and qualified by long experience to speak with authority, suggest at least some of the difficulties encountered in properly caring for the degenerate human beings who make up the larger part of Florida's convict colonies. These conditions do not exist outside the southern states and they are but little appreciated by those who do not know them from personal observation.

DISTRICT SUPERVISION

The duties of the four supervisors, each in his own district, are to inspect the camps under their jurisdiction. Their investigations cover every matter of camp life and labor, the kind and quality of food from the warehouse to the table and the midday lunch pails of the convicts, the clothing worn by the prisoners, the accommodations for sleeping, including the buildings, beds and clothing, the sanitary arrangements and the physical condition and the treatment of the prisoners themselves. These supervisors are required to file a report of every camp with the Commissioner of Agriculture and to keep in daily touch and communication with his office.

The reports of these officers in the past have indicated uniformly the tendency and wish on the part of the lessee and the sub-lessees to fulfil every requirement of contract agreement with the state, and voluntarily to go further in reasonable efforts to improve the condition of the prisoners under their care.

The original contract with the Florida Pine Company provides that it shall not be transferred by the company, nor shall the prisoners be sublet to any one person, firm or corporation. It is allowed, however, to sublet the convicts to such "persons, firms or corporations" (note the plurals) as may be approved by the Commissioner of Agriculture and the Board of Commissioners of State Institutions.

RELIGIOUS INFLUENCES

Commissioner McLin, already quoted, provided for the spiritual welfare of his charges. Religious services are held at least as frequently as once a month at every prison camp in the state, conducted by a clergyman who preaches to the citizens in the section where the camp may be located. These services are held oftener where it is possible to arrange for them. The commissioner also had placed a small library in each camp for the use of the convicts, the books and periodicals being adapted, so far as possible, to the needs and mental capacities of the prisoners.

It is only proper in this place to note the splendid work that is being done by Commissioner McLin's successor, the present commissioner, W. A. McRae. Appointed to fill a vacancy in the office caused by the death of his predecessor in 1912, Mr. McRae was elected by popular vote to fill the position for the regular term thereafter. He has proved himself to be in fullest sympathy with the policies established by Commissioner McLin. A man of thought and action he is progressive and in close touch with the best and most advanced ideas, and his administration of this most complicated office in the State Government has showed his splendid ability.

Although not specifically included in the original contract, the state insists that all prisoners convicted of misdemeanors shall be worked and kept separate from those charged with the more serious crimes classed as felonies. In this respect the penal system of Florida has been placed on a par with that of any other state and in advance of that maintained by most of them.

LEASING OF COUNTY PRISONERS

By an arrangement similar to that between the state and itself, the Florida Pine Company leases from a number of the counties of the state the prisoners sentenced from the county courts. Their terms of imprisonment vary from thirty days to four months. These prisoners are placed in the camps of the sub-lessees and are given the same protection and treatment and are subject to the same conditions and discipline that attend the state's prisoners.

The most humiliating conditions of prison life in Florida are found, not in the camps of the state convicts, but in the county jails. These institutions are under the general supervision of the commissioners of each county, usually business men who have been successful in the management of their private affairs. Naturally few of them are versed in the principles of modern penology and their administration too often is marked mainly by ideas of economy. Too frequently they are ignorant of actual conditions in the jails under their care, which they know of through infrequent inspections and by the reports of incompetent and sometimes selfish officials in charge of these institutions and their inmates.

Many unfortunate conditions are eliminated in those counties where the prisoners under sentence are leased to the contractors for the state's convicts. The legislative act of 1909, which placed the county jail systems under the supervision of the Commissioner of Agriculture, authorizing regular inspection by state officials and the promulgation of a set of rules for bettering these conditions, has had marked beneficial results.

In some counties, fortunately becoming fewer each year, are confined indiscriminately with other prisoners those who are awaiting the slow action of state and United States courts. They are not under conviction and under the presumption of law they are not guilty of the crimes charged, not yet having reached the trials of their respective cases. The Federal Government under contract with the counties, must of necessity patronize these county jails for prisoners awaiting trial and for all sentences under one year.

BENEFITS OF CAMP DISCIPLINE

Reverting to the state prison system, it is possible to judge from even surface conditions, as well as from other indications, a few of the results of humane treatment and of reformatory influences upon the convicts.

The number of convicts including those received, discharged and remaining in custody during 1910, was 1,781. Those in custody January 1, 1911, were 1,326. The number received in 1910 was 442, divided by race and sex as follows: One white woman, 78 white men; 19 negro women and 344 negro men. All but 19 were given sentences of one year or more, and 44, or ten percent, came for the rest of their natural lives. At the beginning of the year 1911, 123 prisoners were held at the Central Hospital or on the prison farm, not subject to the convict lease system. This number represented the female and invalid male prisoners. Eleven hundred and sixty-eight were worked in thirty-one turpentine and lumber camps throughout the state. Of these, approximately eighty percent were negro men, three-quarters of them between the ages of sixteen and thirty-two years. The population of these camps recruited from the lowest, most ignorant and morally depraved classes in the state. They were in the prime of their physical strength and the unrestrained development of their lowest passions. The testimony of competent physicians shows that three-quarters of them were tainted with a loathsome disease, all the way from incipiency by contagion or inheritance, to its incurable stages. It would be difficult to find anywhere a set of men seemingly less likely to be controlled by appeals to their reason or to their moral natures.

HEALTH CONDITIONS IMPROVED

But in spite of these unfavorable conditions the influence of camp life and hospital treatment show surprising results in the death rate among Florida convicts. This rate among the 1,705 prisoners confined during the year 1909, was 8.2 per thousand. For 1910 it was 11.2. Compared with similar facts in other southern states where the convict lease system is in force, the differences are decidedly to the credit of Florida. Louisiana's convict death rate in 1908 was 24.5 and in 1909, it was 22.4 per thousand. Alabama for the four years ending with 1910, had an annual average death rate among her state prisoners of 38.6 for every thousand; and Mississippi, 16 for every thousand in 1909.

The State of Florida in its agreement with the lessees, recognizes their right to the labor of the convict. It recognizes their right to enforce obedience and to secure that labor by adequate punishment, but it limits this punishment to the use of the lash, forbidding the shackling of prisoners under any circumstances, excepting by express permission of the Commissioner of Agriculture in each particular case.

Yet statistics show that most of the attempts at escape are made by prisoners soon after their arrival in camp, usually within ten days and before they have become accustomed to new conditions. Such attempts are not frequent among old-timers nor after the convict has passed several months in these surroundings. It is an established fact that in a large majority of cases the convicts receive better food and more of it, they sleep in more comfortable beds, wear better clothing and, owing to the enforced regularity of their habits, enjoy better health than they have ever known or will know outside the prison confines. They are relieved of all anxiety about the affairs and responsibilities of life, a matter of no little moment to the southern negro.

FASCINATIONS OF PRISON LIFE

That they not infrequently prefer the conditions of prison life is shown by their return to them after the expiration of a term of imprisonment. To many there is small disgrace connected with imprisonment. It is the confession sometimes made to prison officials by a convict returning to serve his second or third, or even his fourth or fifth or sixth term, that he has committed crime in order to be brought back to conditions that prevail in the turpentine camps of Florida. Many of these prisoners have never known anything so nearly approaching their ideas of home comforts as they have found in these prisons.

It is also proved by numerous instances in which the prisoner, discharged at the expiration of his term, has asked the lessee for employment as a free man at the same work he has been performing as a convict. In freedom he receives the wages that have been paid the state for his labor; he is relieved of the oversight of the ever present guard and from the discipline of the stockade. He earns less wages than he might command elsewhere for the same work, but his labor as a free man is no less arduous and his hours are quite as long as when he worked under the eye of the guard. He discards the stripes and he works apart from his former companions, but he has the same fare and he is better housed than he could provide for himself.

ECONOMIC CONDITIONS

Convict labor is not economical labor. Officials of the company contracting with the state for it have admitted the fact and would prefer to employ free labor if it could be obtained and used efficiently. The Florida of today is in the peculiar position of being burdened with a system for whose creation the present generation is not responsible, but which it must administer until it can incorporate into this administration the recognized principles of modern penology.

It would be idle to claim that no abuses can or do creep in to mar this system of convict labor and state supervision. It is, however, a modest claim for Florida's convict labor system that it improves the physical condition of those who come under it; it provides for them better living surroundings than attend the larger portion of them as free men; it throws about them higher moral influences, poor as they may be in the stockade, than debase them at large in the community, and it reduces to the lowest possible minimum the moral degradation which is inseparable from prison life.

But it is a system that the sovereign people of Florida will put away in the near future, when they take upon themselves the responsibility of caring for their criminal classes more in accord with the principles of a higher Christianity, instead of profiting by the sins of those to whom sin is as the breath of life.

CHAPTER XXIX

A LAND OF ENCHANTMENT

FROM the years when Florida was a land of mysteries, made more mysterious by ignorance, it has had a fascination for the traveler. It might be said with a shadow of fact, that until long after the middle of the nineteenth century, the great Peninsular State and its conditions of climate, its soil and fauna were understood by the world hardly better than the regions of Darkest Africa which had been described by Livingstone and Baker and Stanley. Florida was pictured in the popular mind, as a land of swamps and malaria, with delightful winter temperatures, but with a summer climate that was probably deadly to the unaccustomed northerner; a land that was infested by alligators and mosquitoes, and ravaged by Indian outbreaks. The traveler who had visited Florida was regarded almost as an adventurer, and his tales of adventures and wild experiences, however exaggerated, were given undue credence.

In later years, the mild winters were recommended as a tonic for weakened lungs and tubercular patients, and Florida, the part of it that had been opened to the tourists, became a sanatarium for the whole country. Some of these health-seeking travelers were benefited, and regained their normal health—some had come too late. Some discovered that the Florida summer was altogether delightful, with its cooling breezes from ocean and gulf, and they remained to make their homes here.

Gradually, the influx of travelers and tourists grew to larger proportions. Hundreds of them built in various parts of this state their winter homes, where in an atmosphere of orange blossoms and under the moss-draped oaks and palms and magnolias, they dreamed away three or four months of winter and hastened back to their northern homes at the first suggestion of summer temperatures in Florida, while yet those northern homes were covered with snow!

RAILROADS AS DEVELOPERS

To meet the necessities of winter tourists, great hotels were erected in a few Florida cities. Jacksonville, with its famous old St. James and Windsor hotels, became the Mecca; and those who ventured a trip up the St. Johns and along the Ocklawaha, found themselves amply repaid. The more adventurous who traversed the length of the Indian river, from Titusville to Jupiter and then to Lake Worth, found scenes of rare beauty, whose description dispelled some of the misconceptions that had shrouded these places.

It was in reality the extension of the railroads to the previously inaccessible points that opened Florida to the tourist. The development of the east coast by the enterprise of Henry M. Flagler, and the erection of a magnificent chain of hotels as his line of rails extended towards St. Augustine, Ormond, Palm Beach and Miami, was the earliest attempt to meet the demands of tourist travel on a large scale. The progress of the Flagler system was marked by the opening of these hotels at various points, and those farthest south received each season the largest percentage.

EAST COAST HOTELS

This system of hotels includes:

The Ponce de Leon at St. Augustine, which was begun in 1885 and opened in December, 1888.

The Alcazar, also at St. Augustine, completed and opened in 1889.

The Ormond, at Ormond Beach, which was acquired from its original ownership and opened as The Flagler Hotel in 1890.

The Royal Poinciana, at Palm Beach, was completed and opened early in 1894.

The Breakers, also at Palm Beach, was opened in December, 1895.

The Royal Palm, at Miami, was opened in December, 1897.

The Victoria, at Nassau, was acquired, reconstructed and opened in 1898.

The Colonial, also at Nassau, was opened the year following, in 1899.

The Continental at Atlantic Beach, near Jacksonville, was completed and opened in June, 1901. This hotel has recently been sold to other owners and is now opened the year around, under the name of The Atlantic Beach Hotel.

These hotels have a combined capacity of 4,500 rooms. The Royal

TAMPA BAY HOTEL ON HILLSBOROUGH RIVER

GROUNDS OF T. A. EDISON'S WINTER HOME

A WINTER HOME NEAR TALLAHASSEE

A WINTER HOME ON THE ST. JOHNS RIVER

Poinciana at Palm Beach is said to be the largest hotel in the world. It faces west on beautiful Lake Worth. Directly east of it, three-eighths of a mile away, stands The Breakers, overlooking the ocean beach, with the deep blue outlines of the Gulf Stream clearly distinguishable a mile or more off-shore when wind and light conditions are favorable. These two hotels from January to April of each year, may be considered almost the social center of the United States, for here are usually gathered for a brief season social leaders from New York and other important centers of wealth in the United States.

WEST COAST TOURIST RESORTS

The development of the west coast of Florida as a fashionable tourist resort was centered at Tampa, where Henry B. Plant erected the splendid Tampa Bay Hotel on the borders of the picturesque Hillsborough river. He surrounded it with a magnificent collection of Florida trees and foliage, and he incorporated into the hotel itself every luxury and convenience that a refined taste could suggest or that money could procure. It was adorned with works of art and decorations that made it a delight. The property is now owned by the City of Tampa. The hotel is one of the popular resorts of tourists, and the grounds, as beautiful as ever, are used as the city park.

FLORIDA'S WINTER ATTRACTIONS

But the delights of the winter climate have long since ceased to be the only attractions that Florida offers to travelers and tourists. Although the great hotel centers already described have each season their full quota of guests, and there are hundreds of less expensive and less known resorts in Florida that are full from December to May—these tourists are but a fraction of the hundreds of thousands who come to this state every year to remain for a week to six months. Wherever the railroads penetrate, and in the lonely spots reached only by other conveyances—everywhere the tourist is found. Thousands have built winter homes, ranging from the humble bungalow to the mansion of elegance, set in the forests or in gardens of tropical growth. These are occupied for many weeks of the year, to be closed during the months of summer. Other hundreds own orange groves or pineapple plantations, and spend the harvest season in marketing the annual crops.

Florida is no more a winter resort than a winter play-ground.

Some of the finest golf courses in the United States have been laid out in connection with Florida resort hotels. The annual tournaments on the east coast bring experts from all over the United States and Europe into competition for valuable trophies and important championships.

FISHING AND BOATING

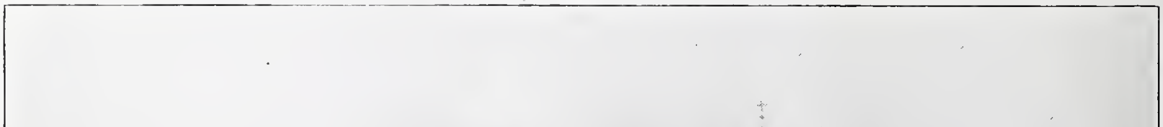
To the fishermen everywhere Florida waters are known for the widest varieties of sport and the gamest fish. During the spring months they flock to the passes and inlets along the lower west coast and from Tampa Bay to Charlotte Harbor around to Biscayne Bay for tarpon fishing. Along the Indian river and in Lake Worth and as far north as the St. Johns river and Nassau sound on the east coast, and from Pensacola to Key West, they troll or whip the waters for a greater variety of food and game fish than is to be found elsewhere in the United States.

Deer, bear, quail and wild turkeys are plentiful in various localities, and although Florida has, and enforces, a rigorous set of game laws, ample opportunity is allowed the hunter under such restrictions as every genuine sportsman approves, to hunt in proper season.

With nearly one thousand, five hundred miles of sea coast and with hundreds of miles of navigable rivers, Florida offers a greater mileage for still-water and inlet power-boat yachting than any other state in the Union. Safe navigation is possible by the inland waterway in small boats from Fernandina to Key West, and along a large portion of the west coast. The St. Johns river and its tributary streams offer from 500 to 800 miles of smooth water, reaching a score of thriving cities and towns, and bordered in the unsettled sections by wild country abounding in game.

In its topography, Florida has no mountains and its highest elevations rise but little more than three hundred feet above sea level. In the western portion of the state some ranges of foot-hills give charming views; and through the southern and central portions, north of Lake Okeechobee, the country has the rolling aspect of western New York. Florida, therefore, is generally level, and its greatest natural beauties are in the wonderful combinations of trees and water. The palm, in its several varieties, is everywhere the decorative tree, by the water courses, in the depths of the forests or overhanging the ocean beaches. Great live and water oaks, which have been growing since the times of Spanish rule, add their dignity to the gracefulness of the palm.

WINTER SURF BATHING AT DAYTONA BEACH



PONCE DE LEON HOTEL, ST. AUGUSTINE

ROYAL POINCIANA HOTEL GROUNDS AT PALM BEACH

SAMPLE OF FLORIDA'S PAVED COUNTRY ROADS

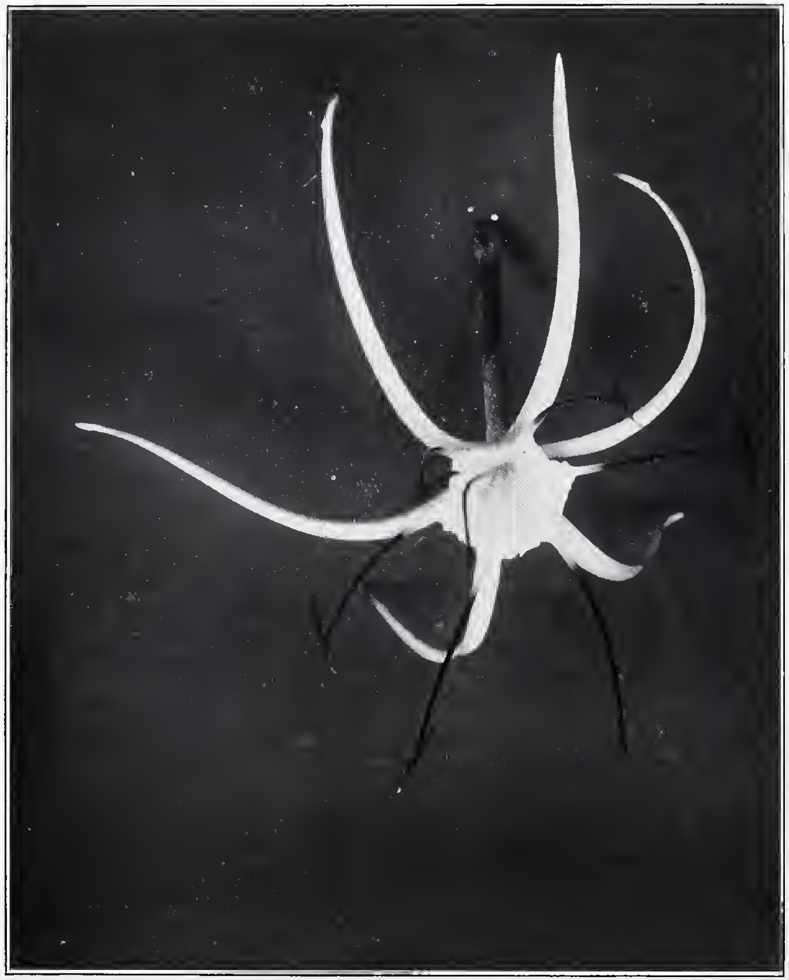
It is the varied beauty of its scenery, in spite of the lack of hills and mountain ranges, that has attracted lovers of nature and art since Florida was first known. Photographers, amateur and professional, find here a wide field of settings for their poses.

GOOD ROADS

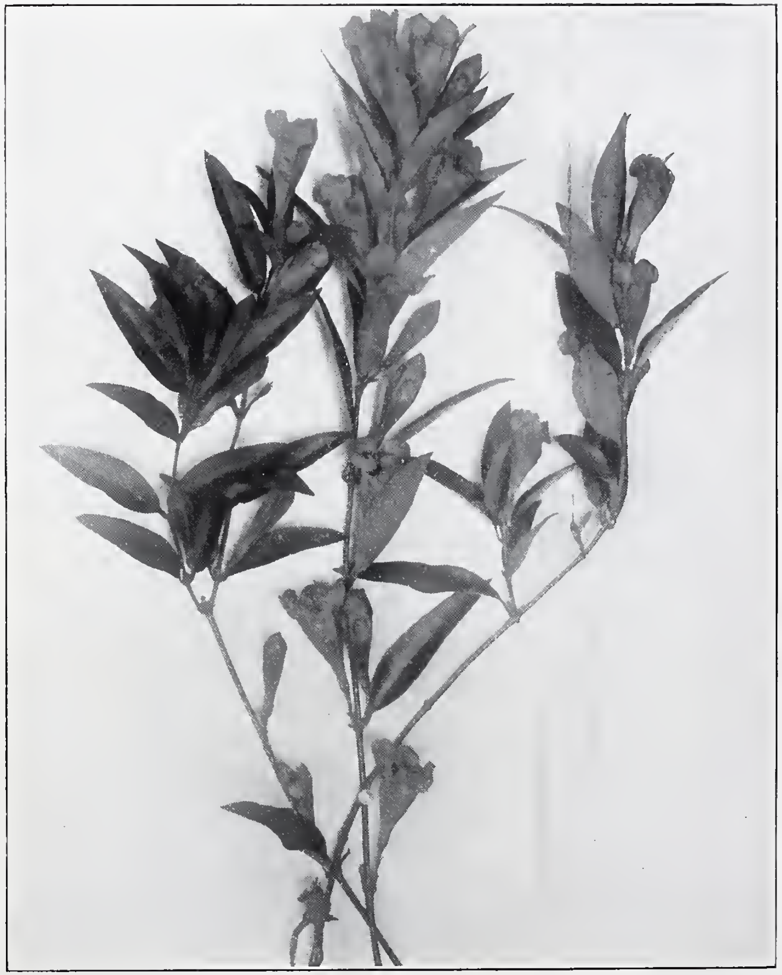
For the lover of the automobile nearly every section of Florida has good roads. Each successive season sees an increasing number of winter visitors and residents arriving from New York, from Illinois, or even from far away Canada, in their automobiles, after driving a thousand miles or more from their northern homes. An active campaign is under way to secure the construction of hard-surfaced trunk lines from Jacksonville to every important city in the middle and southern sections of the state, which will become the arteries of a system reaching every part of Florida. This will be an accomplished fact within a few years. Already it is possible to drive comfortably from Jacksonville to Miami, nearly three hundred and seventy-five miles, down the east coast, at the working speed of the automobile engine. Tampa and Jacksonville are connected by several routes in practical use during a large portion of the year.

It would be difficult to estimate, even approximately, the number of visitors who are added to Florida's population each year. The figures gathered from the railroads and steamship lines make the number above two hundred thousand, and it is probable that Florida's residents are increased through four to six months of each year by a quarter of a million people. In this number are not included the thousands who are coming to Florida, not as tourists, but to make their homes and to win their livelihood on its farms and in its groves.

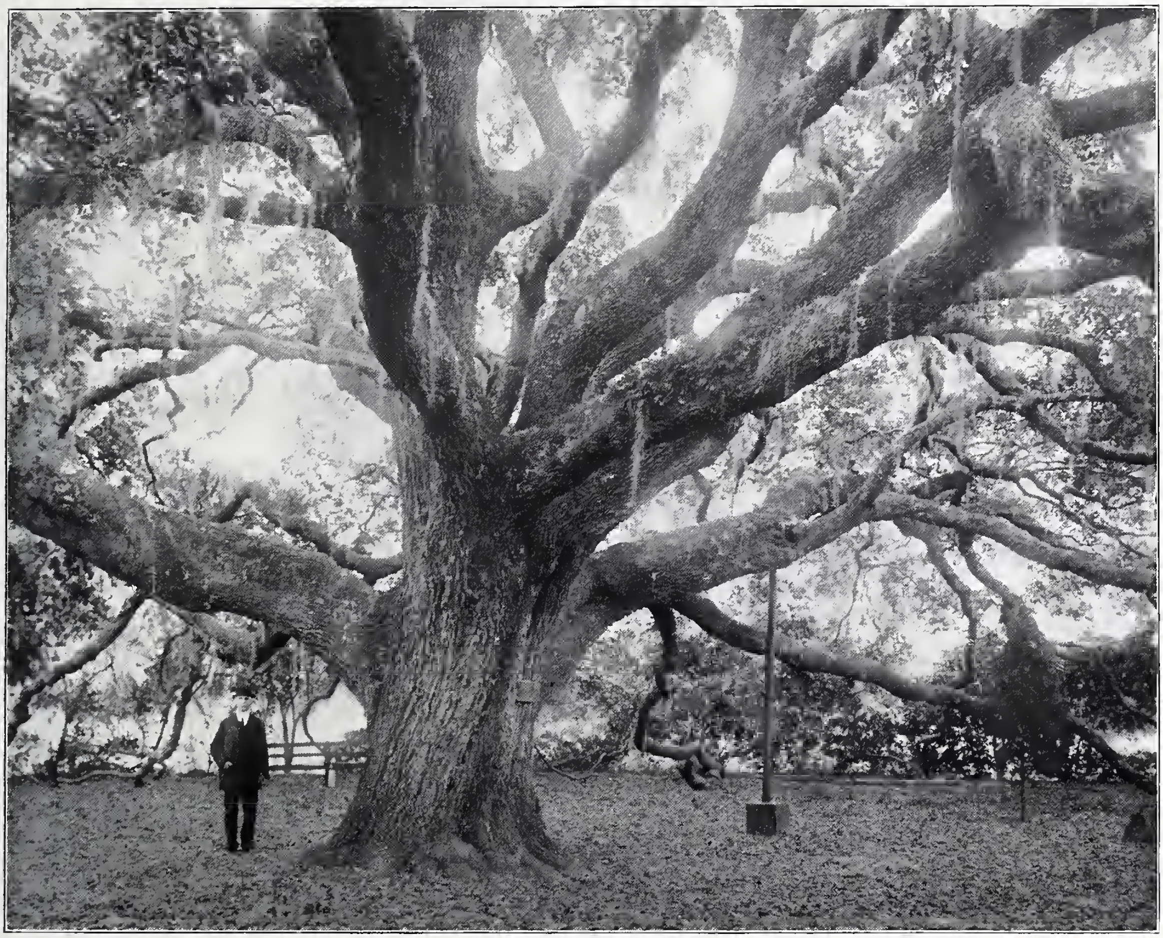
The old-time misconceptions of Florida as the home of malaria and tropical diseases, of unendurable summer heat and of other unknown threatenings, have been dispelled. Its greatest importance to the outside world is not as a tourist playground, but as a great industrial field, which is growing to vast commercial importance.



SPIDER LILY



YELLOW JASMINE



THE BRYANT OAK, NEAR JACKSONVILLE

So called because it was the subject, many years ago, of a visit from William Cullen Bryant, the Poet, who wrote a verse, still preserved on a bronze tablet, attached to the tree. It reads:

The Mighty Oak
By Whose Immovable Stem I Stand
And Seem Almost Annihilated, Not A Prince
In All The Proud Old World Across The Deep
E'Er Wore His Crown, As Loftily As He
Wears The Green Coronal Of Leaves
With Which Thy Hand Has Graced Him.

CHAPTER XXX

FLORIDA COUNTIES

IN A section of such vast area as that of Florida, the second state in size east of the Mississippi river, and extending through nearly six degrees of latitude, a wide variety of soil conditions and resources must exist. A study of such conditions in the northern tier of counties would give but little suggestion of those that prevail four hundred miles further south.

An outline of these differences is undertaken in this article, in which the county is made the basis of description. The area of the state—54,851 square miles, or 35,104,640 acres of land surface, and 58,666 square miles embracing the water surface—is divided into fifty counties, each distinctive from all the others. The measurement of area is based upon reports of the United States Geological Survey of the Department of the Interior, and the population statistics are from the reports of the Decennial Census of 1910, the most recent available. It should be remembered, however, that with one-third of another census period already passed, a due allowance should be made for the increase of these figures.

From 1900 to 1910 Florida increased in population by forty-two and four-tenths percent, or twice as rapidly as continental United States as an entirety during the same decade, and more rapidly than any other southern state or than any state east of the Mississippi river. Nearly two-thirds of this increase came in the last half of the decade, between 1905 and 1910. There can be little doubt that the increase since the latter year has been at a ratio at least as great as during the last five years of the decade. Florida's inhabitants in 1910 were counted as more than 752,000, and there is as little room for doubt that the present population of the state approximates nine hundred thousand and that it will considerably exceed one million, two hundred thousand in 1920.

The density of population for the entire state—the average number of inhabitants to each square mile of land area—advanced from 7.1 in 1890, to 9.6 in 1900 and 13.7 in 1910. Compared with Florida's population, if this state had the density of population of Ohio, it would have six and a half million residents; that of Massachusetts would give it almost twenty-three millions, and that of the District of Columbia, would bring more than three hundred millions, or three times the population of the United States.

For convenience in map reference, the counties have been grouped according to congressional districts, which under the census returns of 1910, were increased from three to four.

FIRST CONGRESSIONAL DISTRICT

Area, 15,872 Square Miles—Population, 168,001—Density of Population, 10.6

This district includes the eleven counties of Lee, De Soto, Manatee, Polk, Hillsborough. Pinellas, Pasco, Hernando, Citrus, Sumter and Lake. It extends along the west coast from the southernmost part of the state to the central part of Florida. It has a total area of 15,872 miles, and the population in 1910 was 168,001, giving a density of population of 10.6.

LEE COUNTY

Lee county occupies the southwestern corner of this state. It has an area of 4,031 square miles, more than four times that of the State of Rhode Island. Its population in 1890 was 1,414, in 1900 it was 3,071, and in 1910, 6,294, giving it a density of population of 1.5 to the square mile.

Included in this area is a considerable portion of the Everglade section, which contains immense quantities of cypress timber. Lee county was brought into existence under an act of the Florida State Legislature of 1887. It was cut off from the county of Monroe, of which Key West was the center of population. In its early history, Lee county was little known and its resources were unappreciated, but the vastness of its territory was its salvation. Although the population was scattering, the lands were in the hands of large corporations, and the tax revenues from these financed the necessary government of the county.

In the early days, and continuing until the present time, stock-raising has been a leading industry. In the earlier days of the county, before it had a separate existence, it was the source of supply for much of Cuba's beef consumption and this continued until after the Spanish-American war in 1898. In former times, some of the largest herds in the world ranged over its acres, but the gradual breaking up of the arable lands into smaller farms and plantations is threatening the existence of stock-raising on the range.

A splendid variety of soil in this county is particularly adapted to the raising of early vegetables and citrus fruits. Pineapples have been undertaken on a large scale in Lee county.

Fort Myers, the county seat, is situated on the Caloosahatchee river, eighteen miles from the gulf. It is an important point in Florida's history, having been closely connected with the Seminole Indian wars. It was garrisoned by United States troops prior to 1850, and about 1857 Gen. Winfield Scott Hancock, then a young officer, was in command of the fort.

Within recent years, Fort Myers and the surrounding country has become a winter home of a large number of prominent and influential northern citizens. Mr. Thomas A. Edison has here a beautiful winter home, and many other people almost as well known spend a large share of each year in this vicinity.

Lee county has a longer coast line than any other Gulf county, and its waters are alive with many varieties of food and game fishes. More than two million dollars' worth of fish were shipped from Punta Gorda under refrigeration to northern markets in 1912. Its climate is particularly desirable, and in spite of its extreme southerly location its variations of temperature through the year are surprisingly small.

DE SOTO COUNTY

De Soto county, the second largest in area in Florida, contains 3,754 square miles. Its population in 1890 was 4,944, in 1900 it was 8,047, and 14,200 in 1910.

In climate it would be difficult to find on the mainland of the United States any more enjoyable; its extremes of summer temperature rarely reach ninety-five degrees, and the occurrence of frost is rare. Its lands are classed as hammock, high pine and flat woods. No section of like extent is capable of a wider variety of soil productions. Oranges and vegetables are among its largest products. Immense areas of yellow pine and cypress in addition to hickory, live oak, ash, palmetto, magnolia and some mahogany, make this one of the most valuable timber counties in the state.

Livestock has been the principal industry and thousands of cattle

GASPARILLA LIGHTHOUSE ENTRANCE TO CHARLOTTE HARBOR have been shipped to Cuba in years past. Bananas, pineapples, guavas, mangoes, avocados and cocoanuts, besides a number of fruits unknown outside of Florida, are raised successfully here.

Immense deposits of pebble phosphates have been discovered in De Soto county, and this industry has brought enormous investments and large returns to this section. The principal cities are Arcadia, the county seat, which, incidentally, has for several years been the largest shipping point of citrus fruits in the world; Punta Gorda, on Charlotte Harbor, a great shipping point for fish; and Wauchula, famous for citrus fruits and vegetables. No county in Florida is developing more rapidly than is De Soto.

MANATEE COUNTY

Manatee county has an area of 1,337 square miles. Its population in 1890 was 2,895; in 1900, it was 4,663; and in 1910 it was 9,550.

The general lay of the land is level, broken by some gently rolling country. Its soil is mainly of the pine land class, which is productive of citrus and other semi-tropical fruits. A considerable portion of the county remains to be developed by irrigation and drainage, by which it will be made one of the most productive sections in the southern half of the state.

The principal industries are fruit and vegetable growing, and the raising of livestock. Immense tracts of open prairie extending almost the whole length of the county north and south, down the Miyakka River valley, offer perhaps the finest and largest unbroken cattle ranges east of the Mississippi river. The agricultural resources of this county are receiving the attention of home-seekers and of capitalists, and its growth commercially seems to have been confined to the last ten years.

Bradentown, the county seat, is a thriving, progressive little city on the banks of the Manatee river, in the midst of a prosperous and fertile section.

POLK COUNTY

Polk county is one of the important interior counties of Florida. It has an area of 1,907 square miles. It increased in population from 7,900 in 1890, to 12,470 in 1900, and to 24,148 in 1910. This county occupies a position midway between the Atlantic ocean and the Gulf of Mexico, and the dividing ridge or "backbone" of the state extends into this section. It has some of the highest elevations in the state, which afford splendid drainage and desirable agricultural lands. Its soils are divided generally into hammock, high pine, flat woods, prairie and muck, much of it underlaid with a poorer subsoil of clay, marl or phosphate. Its high elevations and its lower lands give it a variety of soils and soil products hardly to be expected in a section so far south. Corn is a staple crop and sugar cane is extensively cultivated, yielding large profits. Potatoes, sweet and Irish, rice, oats, rye, millet, velvet beans, cassava and a large variety of forage crops are extensively and profitably raised. Its list of vegetables and fruits equals in variety those produced in any other county of Florida. Cattle-raising has also been and still is a large and paying industry.

Phosphates have been discovered over large areas. Kaolin, gypsum and marl also have been discovered, and these deposits await the investigation of capitalists.

Bartow, the county seat of Polk county, has become the railroad center of this section, and these connections give easy access to and from other portions of this state. Lakeland, in the northwest part of the county, is also an important railroad and shipping center. The territory about it produces the earliest strawberries in the New York markets, and the rich lands have large possibilities in their early fruits and vegetables. Among the other important centers of population are Winter Haven and Fort Mead, both of them important and growing cities.

HILLSBOROUGH COUNTY

Hillsborough county, in 1910, had an area of 1,329 square miles, and the population was 78,374, the largest of any county in Florida. The Legislature of 1911 created from this area a new county, Pinellas, which included all the territory lying west of Tampa Bay and of a line running north from Safety Harbor. The separate statistics for the two counties have not been published, except in minor particulars, therefore the area and population given include both counties. This population, in 1890, was 14,941; and in 1900 it had increased to more than 36,000. No section of Florida has seen more rapid development agriculturally and industrially than this. Tampa, the largest city and county seat, is the second largest city in this state, and it is growing at a rate which in time may rival Jacksonville's supremacy in this respect. It is the shipping point for the largest proportion of Florida's phosphates. From this port go to the outside markets a very large production of lumber, and it is said that a hundred billion feet of standing timber is included in the Tampa territory. Tampa also employs in its cigar industries about fifteen thousand workers; and its daily average output exceeds one million cigars. It is the largest cigar manufacturing point in the world.

The recorded history of this county began in 1529 with the landing of Narvaez, the commander of a Spanish exploring expedition. In later years, De Soto landed here and began his exploration of Florida and the lower Mississippi territory. This county was prominent also during the Seminole wars, and it was a point of mobilization of the United States armies during the war with Spain in 1898.

Its important agricultural industries are cattle-raising, vegetable and fruit crops, a large variety of the vegetables maturing for the early northern markets.

The temperature and climatic conditions of this region are salubrious, owing largely to the great bodies of water upon which it is located. Tampa is an especially attractive point for tourists, and its citizens are progressive, active and energetic.

PINELLAS COUNTY

As already intimated, Pinellas county was created by the Legislature of 1911, and separate figures of its population were not included in the census reports of 1910. It is a thickly populated county, richly productive of vegetable and fruit crops which mature early, and it is probable that no equal section of this state in area is growing more rapidly in importance and wealth.

It is located between the gulf on the west and Tampa Bay on the east, which gives it a climate unsurpassed by any section in this latitude. The county seat is Clearwater. Probably its most important city is St. Petersburg. Located in the northwest corner of the county, on the Anclote river, is Tarpon Springs, which is the center of the sponge-producing industry in the United States. This unique fishery is described at length elsewhere in this book of Florida.

PASCO COUNTY

Pasco county has an area of 767 square miles. Its population in 1890 was 4,249, in 1900 it was 6,054 and in 1910, 7,502. By an act of the Legislature of 1887, Hernando county was divided into three parts and to these were given the names Citrus, Hernando and Pasco counties. It is a very rich and desirable portion of the original Hernando county. It has a soil of exceptional fertility and climatic conditions are most favorable. It is particularly rich in the production of citrus fruits, strawberries and watermelons, and the guava, banana and pineapple may also be raised. Its recent development has been rapid and its promise for the future is most excellent.

Its capital, Dade City, not many years ago an insignificant hamlet of the forest, has grown into a thriving city with fine educational and social resources. Among the other important cities and towns of the county are, San Antonio, Richland, Owensboro and a number of others of less population and wealth.

HERNANDO COUNTY

Hernando county has an area of 497 square miles. Its population in 1890 was 2,476, in 1900 it was 3,638 and 1910 it was 4,997.

The entire county has a rolling and hilly surface, in several places reaching an altitude of more than three hundred feet. There are several beautiful rivers and many small clear water lakes scattered through the pine woods, which abound with many varieties of fresh water fish. It has a stretch of twenty-five miles along the gulf, with an abundance of fish which attract sportsmen and tourists in great numbers each season. Its hills are covered with a rich growth of oak, hickory, red bay, magnolia, cedar and other valuable timber.

Among its soil products are a high grade of sea island cotton, rice, corn, oats and peanuts. The sweet potato is an important yield and cassava is a profitable crop. The pecan and hickory thrive here and strawberries, blackberries and dewberries are becoming increasingly important in the commerce of the county.

Hernando county has at least one billion feet of standing hardwood timber. Millions of feet of red cedar and immense quantities of cypress offer great inducements for the investment of manufactures wherein the hardwoods are essential.

The little city of Brooksville is the county seat, located on an elevation three hundred and thirty feet above sea level and is one of the highest points in the state. Its healthfulness is marked by the fact that it has never had an epidemic of any disease.

CITRUS COUNTY

Citrus county has an area of 620 square miles. Its population in 1890 was 2,394, in 1900 it was 5,391, and in 1910, 6,731.

Embraced within the limits of this county is a section of high rolling land, lakes and streams. It is devoid of low and swampy land and its natural conditions make it as healthful as any spot on earth.

Its mineral resources are principally phosphate rock which is probably more abundant in Citrus county than in any other equal area in Florida. The area in which hard rock phosphate exists is unknown and probably has never even been approximated by prospectors.

Its agricultural products vary widely, corn, oats, sweet potatoes, peanuts, Irish potatoes, sugar cane and cabbage are among the principal articles of agricultural export. Its county seat is the city of Homosassa, which has become a favorite resort and winter residence for tourists from all parts of the country.

SUMTER COUNTY

Sumter county has an area of 599 square miles of land surface. Its population in 1890 was 5,363, in 1900 it was 6,187 and in 1910, 6,696.

The topography of the country is generally undulating, although large portions are entirely level. The timber growth is mostly pine with scattering hamlets of various hardwoods. A considerable portion of the county is occupied with lakes and small fresh water streams, and along the banks of these, lands of great fertility are found. The agricultural products include sea island cotton, corn, oats, potatoes, peanuts, velvet beans, cabbage and citrus fruits.

Sumterville is the county seat. It is surrounded by a rich farming and fruit growing section. It has good schools and churches, most of the religious denominations being well represented throughout the county.

LAKE COUNTY

Lake county has an area of 1,047 square miles. Its population in 1890 was 8,034, in 1900 it was 7,467, and in 1910 it was 9,509. The decrease in population between 1890 and 1900 was due to the extreme cold weather of 1894-95 which destroyed the citrus groves. This disaster has been overcome and the county is well on the way toward greater prosperity and increased population.

Nearly one-sixth of the area of this county is covered with beautiful lakes of fresh water, from which circumstance the county takes its name. Lake county contains many varieties of soils which are adapted to fruit growing, vegetable raising and general farming. So rich are these lands that three crops the year are not unusual.

Formerly the orange industry was the principal occupation of farmers in this county. The experiences of 1895 destroyed this business and although discouraged, the orange growers undertook to renew their groves and some of the finest citrus-producing farms are to be found in this county. Long staple cotton, sugar cane, cassava, velvet beans and cowpeas and beggar weed are raised with profit. Within recent years the cattle industry, under the improved conditions of graded stock, fenced fields and winter feeding has become an increasingly important industry. No section of Florida offers more inducement for this industry than Lake county.

Immense deposits of kaolin of a very high grade have been uncovered in this section. Some of these mines exceed in extent any others yet discovered in the history of the world. The clays of this section vary in their qualities and are available for a large variety of commercial uses.

Lumber manufacture is also an important industry.

Tavares is the county seat. It is equipped with excellent educational, social and municipal facilities and its affairs are managed by men of energy and integrity. Among the other important towns of the county are Eustis, Umatilla, Astor, Mount Dora, Sorrento, Yalaha, Lady Lake, Fruitland Park and Leesburg. The last named city is the most populous incorporated town in the county.

SECOND CONGRESSIONAL DISTRICT

Area 11,422 Square Miles—Population 197,086—Density of Population 17.2

This district includes the thirteen counties of Nassau, Baker, Hamilton, Columbia, Suwanee, Bradford, Alachua, Marion, Levy, LaFayette, Taylor, Madison and Jefferson. This district, the most populous in the state, includes in general the northern tier of counties along the eastern part of the Georgia line, extending thence across to the gulf and including some of the richest interior parts of central Florida.

NASSAU COUNTY

This county occupies the northeastern corner of Florida, and the St. Mary's river separates it from the State of Georgia. It has an area of 630 square miles and its population by the 1910 census was 10,525.

The general topography of the county is level and the soils vary from low rich swamp lands to high pine lands. The agricultural resources of the county have not been developed to more than a fraction of their possibilities. The wide extent of pine lands adapted to turpentining and timber have delayed the agricultural development of this area. It has been demonstrated that all the crops of grain, fruits and vegetables that can be raised in the northern half of Florida, can be cultivated here with profit. The large area of streams and water covered lands in the western part of the county and the influence of the ocean, afford a protection from the cold of winter quite as effective as in the interior counties two hundred miles further south.

The waters of Nassau county abound in fresh and salt water fish in many varieties and the natural oyster beds are the equal of any that border the State of Florida.

Fernandina is the county seat, the most important town within the county, and is located on one of the best deep water harbors on the Atlantic coast. For a hundred years this has been a shipping point of varying importance, and it has an important part in the later Spanish history of Florida.

BAKER COUNTY

Baker county, although among the smallest in area, has a rich history and a bright future. In area it covers 587 square miles, its population in 1890 was 3,333, in 1900 it was 4,516 and in 1910 it was 4,805.

The topography of the county is generally level and the soil mostly sandy with some small extent of hammock lands. The principal productive interests are farming, truck growing and lumbering. Within the past few years many northern farmers have become interested in the settlement of lands near the center of the county and the Irish potato industry has already assumed large proportions with corresponding financial advance. Baker county produces a large acreage of sea island cotton, of corn, oats, sweet potatoes, sugar cane and peanuts. The county seat is Macclenny. The battlefield of Olustee is located in the western part of the county and the site is marked by a handsome monument, erected and dedicated by the Confederate women of Florida. The battle of Olustee was the most serious which occurred in Florida in connection with the Civil war, and the decision of this clash at arms settled the attitude of Florida as strongly entrenched with the Confederate cause.

HAMILTON COUNTY

Hamilton county, in the northern part of the state, is bordered on the north by the State of Georgia, on the east and south by the Suwanee river and on the west by the famous Withlacoochee river. It is one of the smallest counties in the state, having an area of 528 square miles. Its population in 1890 was 8,507, in 1900 it was 11,081 and in 1910, 11,825. Although these figures indicate no marked advance in population during the last census period, the fact remains that in its industrial growth a large advance was made in agricultural development and this has continued so that the census of 1920 will doubtless show large increase in wealth and developed resources.

The principal crop is sea island cotton, of which many thousand bales are produced each year. Peaches, pears, plums and figs as well as grapes yield abundant harvests. The manufacture of lumber, the production of naval stores and phosphate mining are important industries. The larger portion of Hamilton county is covered with merchantable timber and the clearing of these lands has been as the consumption of the lumber mills demand the standing timber. It is probable that with large areas ready for agricultural purposes, the agricultural development will progress much more rapidly.

Jasper is the county seat, a thriving town of increasing commercial importance.

COLUMBIA COUNTY

Columbia county has an area of 792 square miles. Its population in 1890 was 12,877, in 1900, 17,094, and in 1910, 17,689. The natural timber growth is pine and a large variety of hardwoods. In agriculture, sea island cotton is a large product. Pecans and tobacco are both important soil products beside a large variety of vegetable and berry fruits. The natural grasses and forest plants afford fine pasturage for cattle and sheep and this is one of the few counties in Florida where sheep raising has assumed considerable proportions. Lake City is the capital of the county, and is one of Florida's thriving, enterprising cities. It is the center of a large agricultural development and it has also important educational interests.

SUWANEE COUNTY

This county has an area of 689 square miles. Its population in 1890 was 10,524, in 1900 it was 14,544 and in 1910 it was 18,603.

Geographically, Suwanee county is located in what is known as Middle Florida. It is traversed by the principal railroads connecting the eastern and the western parts of the state. Its resources are agricultural, and particularly, the raising of sea island cotton, which here is of an unusually long and silky fiber. Other crops raised here largely for home consumption, are sweet potatoes, corn, sugar cane, Irish potatoes, cassava and the usual vegetables which belong in this latitude. Lumber manufacturing is a most important industry, and several manufactories of hardwood timbers are in operation. The county authorities have within recent years paid particular attention to the construction of hard-surfaced roads, realizing their importance to the industrial development of the county.

The county seat is Live Oak, which is also the financial capital of the county. It is a thriving city of nearly five thousand people.

BRADFORD COUNTY

Bradford county has an area of 552 square miles. Its population in 1890 was 7,516, in 1900 it was 10,295 and in 1910 it was 14,090. This county has an unusual variety of soils—rich hammock, fertile sugar and rice muck lands, pine loam, and deep and undulating and flat woods loam, all underlaid with clay sub-soil. The development of the agricultural resources of this county has been delayed until within recent years by the immense uncleared tracts of timber, which were being used for turpentine and lumbering purposes. However, large areas have been cleared and the development of special crops has become a feature. In the neighborhood of Starke, many acres have been devoted to strawberry culture, which matures two or three weeks later than the Hillsborough county fruit, but still in time to reap the benefit of the first-of-the-season prices in New York markets. From two hundred dollars to five hundred dollars per acre profit has been reported from these strawberry lands.

Sea island cotton, sugar cane, rice and cattle-raising are sources of large profit. The general elevation of Bradford county is from one hundred and fifty to one hundred and eighty feet above sea level. With its naturally dry soils and good drainage, it is one of the most healthful counties in the State of Florida.

The little city of Starke is the county seat, thriving and rapidly growing. Other important towns in the county are Lake Butler, Lawtey, Hampton, New River, Sampson City and Highland.

ALACHUA COUNTY

Alachua county has an area of 1,262 square miles. Its population in 1890 was 22,934, in 1900 it was 32,245 and 34,500 in 1910. It has a general level of about two hundred and fifty feet above the ocean. It has a rolling surface which affords excellent drainage, and it has a crop variety equal to that of any northern state, the only cereal which cannot be produced profitably being wheat. Cotton, tobacco, sugar cane, vegetables and fruits in large varieties are paying crops. Cassava of fine quality is a demonstrated possibility on this soil, and opens the way for the development of starch manufacture on a large scale. Some of the finest orange groves in the state were formerly located in this county, and large fortunes were gained from them.

Among the first phosphate mines to be opened and worked in Florida were those found in Alachua county, and this industry has developed in later years to immense proportions. Timber interests of yellow pine and a large variety of hard woods, are very valuable here. The county seat is Gainesville, one of the important cities of Florida. It had a population exceeding 6,100 in 1910, and it has a decidedly progressive and metropolitan air. It is the site of the University of Florida, and to secure the establishment of this institution the citizens of Gainesville made large and rich donations of land and many subscriptions of money. This university, which is described elsewhere in this book, now in its seventh year, is one of the most advanced institutions in the south, and its curriculum has been so planned as to afford the best advantages to the young men of the state.

One of the most important railroad centers in this part of the state is at High Springs. This town owes its growth to the enterprise of its citizens. Among other important centers of population are Archer, Micanopy, Rochelle, Island Grove, Melrose and Campville.

MARION COUNTY

This county has an area of 1,647 square miles. Its population in 1890 was 20,796, in 1900 it was 24,403 and in 1910 it was 26,950.

Marion is at the center of the peninsular counties of Florida. It has a rolling surface of beautiful hills and rich lands between. It is essentially an agricultural county and has a reputation for a yield of cotton, corn, peas, potatoes, sugar, syrup and many other products, in addition to its large product of citrus fruits. The hammock lands of Marion county, covering almost one hundred thousand acres, are productive of some of the finest citrus groves in the state. Conditions also have favored the cattle industry, and it has been undertaken here within recent years in a scientific manner by the introduction of high grade pedigreed cattle. Marion county's stock has taken blue ribbons through all the southeastern states.

Ocala is the county seat of Marion county and one of the most important points in middle Florida. Its population increased from 3,385 in 1900 to 4,370 in 1910. It is particularly fortunate in its location and surroundings. The far-famed Silver Springs and Ocklawaha river are but a few miles east and afford navigation for commerce to the St. Johns river and through the port of Jacksonville to the markets of the world. Orange Lake, in the southern part of the county, has been made a bird reservation by the United States Government, and here are protected the nesting grounds of a large variety of game birds. Among the other important centers of Marion county are Flemington, Orange Springs and Mackintosh.

LEVY COUNTY

Levy county borders the Gulf of Mexico. It has an area of 1,143 square miles of land territory. Its population in 1890 was 6,586, in 1900 it was 8,603 and in 1910 it was 10,361. Topographically the lands of the western part of the county bordering the Suwanee river are hammock and pine, most of it very rich for agricultural purposes. The eastern border of the county is of high pine land, rich in its dark loam soils, underlaid by limestone and clay. Between the two extremes is a wide diversity of soils, such as is common in all sections of Florida and in the southern part of the county lies the famous Gulf Hammock extending for thirty miles along the gulf and from eight to ten miles wide. This is the largest body of dense growing hardwood in the state. It contains all the hardwoods that belong in Florida and has a large growth of red cedar. These tracts are among the richest in wild game that are known in the peninsula. Bear, deer, wild turkey, squirrel, quail with an occasional panther making the section famous among sportsmen.

Magnificent bodies of cypress timber of the highest grade and of the most compact bodies of the southeastern states are found in this county, and it is claimed that some of these acres are known to have cut as high as 120,000 feet of merchantable timber.

Among the fruits are the peach, plum and strawberry; among the farm crops are corn, sweet potatoes, peanuts, cowpeas and oats, and a large variety of native grasses that are especially favorable for stock-raising.

The county seat is Bronson, located in the northeastern part of the county in the midst of a fine farming section and with a prosperous and energetic population.

LA FAYETTE COUNTY

LaFayette county has an area of 1,244 square miles. Its population in 1890 was 3,686, in 1900 it was 4,987 and in 1910 it was 6,710. Its mineral resources, so far as they have been developed, are phosphate rock and although these are known to be very extensive, they have not yet been worked to their producing capacity.

The agricultural products of the county include the sea island cotton, corn, oats, sweet potatoes, field peas, peanuts, velvet beans and sugar cane products.

The county seat is Mayo, a thriving town of increasing importance. Old Town on the lower Suwanee river is one of the early known historical points in Florida, and during the Spanish invasion of the country and during the period of English rule over the eastern part of the state it was a rendezvous for various Indian tribes.

TAYLOR COUNTY

Taylor county borders the Gulf of Mexico, which touches it on the south. It has an area of 1,064 square miles. Its population in 1890 was 2,122, in 1900 it was 3,999 and in 1910 it was 7,100.

Taylor county was originally a part of Madison county, from which it was separated by the Legislature. In soil it has not as large a variety as some of the other important counties of the state, but this soil is well adapted to the production of a high grade of sea island cotton, sugar cane, rice, cassava and all the vegetables that belong in this latitude. The large area of pine forests have made it important in the naval stores industry. So far as is known, the only indications of oil and natural gas in the state have been found here. These indications have not as yet led to the investment of capital for their possible development into important industries.

Taylor county has a long coast line and the fishing industry affords employment to a considerable portion of the citizens in the southern part, which is a source of large income. No section of the Florida coast is richer in its production of salt water fish, although the extreme southern part of the peninsula has more varieties.

Perry is the county seat, which in 1910 had a population slightly exceeding one thousand inhabitants.

MADISON COUNTY

Madison county touches the State of Georgia along its northern border. It has an area of 719 square miles. Its population in 1890 was 14,316, in 1900 it was 15,446 and in 1910 it was 16,920.

Madison county was organized very early in the statehood of Florida. It then extended from the Georgia line to the Gulf of Mexico and from it at various periods the counties of LaFayette and Taylor were formed. It is a part of the rich agricultural section that stretches across the northern part of Florida, midway between the ocean and gulf. Its lands are generally undulating and even hilly. The western half of the county has large areas of oak and hickory and the eastern part is well timbered with yellow pine. About one-third of the county is under cultivation. The principal money crop is sea island cotton, but in more recent years other more profitable soil products have taken the attention of the farmers.

Madison, the principal town and county seat, was organized in 1838. It has a population of about two thousand progressive citizens who have built up a modern city.

JEFFERSON COUNTY

Jefferson county is located at that part of the western section of Florida, where the distance between the gulf and the Georgia state line is shortest. It has an area of 585 square miles. Its population in 1890 was 15,757, in 1900 it was 16,195 and in 1910 it was 17,210.

Topographically its surface is generally high and rolling, offering nearly all the variations one may find in traveling through several states. Originally it was well covered with a virgin growth of pine forests and as the land rises to higher levels an abundance of live oak, hickory, magnolia, poplar and a variety of mahogany were found.

The soil presents considerable variety adaptable to the usual variety of vegetables and farm crops to be found in this locality. Within the last ten years large attention has been paid to the cultivation of the pecan and large groves have been set to this nut with much profit to their owners. It seems probable that it will be one of the richest pecan producing sections in the Gulf states.

The capital is Monticello, which has sent to the other parts of the state and Georgia some of the most progressive and energetic men that have helped build Florida into a great state. It has retained for its own upbuilding men of character and energy, who are making this one of the most important cities in the center of northern Florida.

THIRD CONGRESSIONAL DISTRICT

Area 10,856 Square Miles—Population, 190,960—Density of Population, 17.6

This district includes the thirteen counties of Leon, Gadsden, Wakulla, Liberty, Franklin, Calhoun, Jackson, Holmes, Washington, Bay, Walton, Santa Rosa and Escambia. This district, which is the most thickly inhabited of any section of this state, extends eastward along the gulf from Alabama. It includes some of the richest land and the finest area of hardwood timber, in the United States. It is rich in historical association, for it formed a large part of the territory of West Florida under English rule, and was occupied in pre-historic times by numerous and populous tribes of native Indians.

LEON COUNTY

This county has an area of 715 square miles. Its population in 1890 was 17,752, in 1900 it was 19,887 and in 1910 it was 19,427. The area of this county varies much in topographical character, ranging from the flat woods in the southern section of the county to the beautiful hills in the central and northern parts, which give it an aspect of beauty and variety that it were difficult to find elsewhere in the south.

From some of these elevations the general aspect of the country is beautifully rolling, with forest and field alternating. Its hillsides are rich in timber—magnolia, live oak, water oak, hickory and wild cherry, abounding in immense, unbroken tracts, and overhung with magnificent growths of clematis, woodbine and wild grape vines.

About one-third of the county has been reduced to agricultural cultivation, while vast areas are still possessed by turpentine farmers and the lumbermen.

Its soil differs much from that in many other sections of the state. It is principally an alluvium of red clay loam, overlaid with sand in many sections. This soil is rich in phosphoric acid and potash, and these elements, with an equability of temperature and seasonal rainfall, make its productive capacity among the richest in the state. The staple products are corn, sea island cotton, sugar cane, sweet potatoes, oats and tobacco. One of the most important crops at the present time is tobacco, the culture of which has been undertaken on a large scale. The famous "Vuelta Abajo" seed is best adapted for planting here, and the production is one of the best for cigar wrappers. The yield runs from eight hundred to one thousand pounds to the acre, and commands from twenty to forty cents a pound, according to quality.

The natural pasturage in Leon county makes it possible to engage extensively in cattle-raising, and some of the finest herds in the state are in this county. Special attention has also been paid to the breeding of horses, and the Leon county stock is noted for its excellent staying qualities and handsome appearance. There is in Leon county fine opportunity for the development of dairying, which has not yet been improved to a large degree.

In fruits and vegetables, Leon county holds its own with other sections of this latitude. It is likely that this county excels any other section of its size in the production of grapes and wine. For a number of years the San Luis vineyards, near Tallahassee, have yielded large quantities of grapes, and many thousands of gallons of choice wine, all of which are sold in New York and Paris, to private consumers. The catawba, concord and scuppernong, and several other varieties of grapes fruit well and bear abundantly in Leon vineyards. Figs, pomegranates and persimmons reach their best development in this county.

The principal city is Tallahassee, the capital of Florida as well as the county seat of Leon county. This site was selected as the location for the capital of the Territory in 1824, and in May of that year an act was passed by the National Congress providing a grant of land for the permanent seat of government, which point was to be regarded as the point from which the principal meridian and parallel should run. The main part of the city is located on a pretty hill, some three hundred feet above sea level. In reality, Tallahassee, like ancient Rome, has been built upon seven hills. The State College for Women occupies one of these, the Agricultural and Mechanical College for Negroes surmounts another, and from both magnificent views of the city itself, embowered in trees of gigantic size and wonderful foliage, make it appear almost ideally beautiful.

The magnificent natural groves, and the hills that surround the city of Tallahassee, have also been made the sites of correspondingly magnificent homes, which are occupied during the winter season by men of wealth whose residences and business are in the north or in Europe.

GADSDEN COUNTY

This county has an area of 540 square miles of land surface. Its population in 1890 was 11,894, in 1900 it was 15,294 and in 1910 it was 22,198. Gadsden is one of the finest agricultural counties of Florida and its growth and prosperity are indicated by its increase in population. Its lands range from heavy red clay, with extensive forests of hardwood timber, to light, sandy soils covered with pine timber, which have been for years a source of wealth. Its rolling character and numerous streams, fed by natural springs, give an excellent water power in many parts of the county, which, however, have not yet been developed to more than a small fraction of their possibilities.

For a score of years or more, tobacco growing has been a leading industry. The annual crop has several times run as high as a million and a half pounds. The variety principally cultivated is the Sumatra, which is raised under shade and the tobacco from this county took the gold medal at the Paris Exposition. Cotton, of the sea island variety, is a staple and a large paying crop. Rice, peanuts, oats, Irish potatoes, cabbage and Bermuda onions are the chief crops.

The only mineral deposits of special value that have been uncovered are the clays, particularly fine kaolin and fullers' earth. The latter product has become an article of considerable commercial importance.

The county seat is the city of Quincy, which has a population of about three thousand, five hundred. It is the headquarters of the tobacco industry of this section. At Chattahoochie is located the State Asylum for the Insane.

WAKULLA COUNTY

Wakulla county has an area of 601 square miles, or 384,640 acres, of land surface. Its population in 1890 was 3,117, in 1900 it was 5,149 and in 1910 it was 4,802.

Wakulla county borders the Gulf coast of Florida and topographically it is generally rolling although broken in some sections by an extensive ridge or plateau. This surface forms a water shed which extends with gradual slope toward the gulf, where it drops off into the flat woods. On the higher lands there is much pine, dense growths of oak and hickory and denser hammock land. The hammocks are heavily timbered with oak, magnolia, sweet gum, cedar, hickory and several varieties of the bay tree. These resources have been but little developed and present important possibilities of development.

The soil of the county is rich in many sections and is capable of producing large yields of sugar cane, cotton, sweet potatoes and corn. There is no better general farming land in the state and it is well adapted to stock-raising. Along the coast the fishing industry is an important one and several large lumber mills have an important commercial output. Crawfordville is the county seat and central business point of the county. In general the resources of this county have not been developed largely and they offer substantial rewards to the farmer.

LIBERTY COUNTY

Liberty county has an area of 823 square miles of land surface. Its population in 1890 was 1,452, it was 2,956 in 1900 and in 1910 it was 4,700. It is bordered on the west by the Apalachicola river and is separated from the gulf by Franklin county, of which Apalachicola is the port for both counties.

The turpentine interest is a large one and the pine forests which cover much of the county, have been "boxed" for this industry. It is a rich section for vegetable growth and for many of the fruits which thrive in this latitude. The capital is Bristol, a thriving town of about five hundred inhabitants, and it has become decidedly popular in recent years as a winter home for northern visitors.

FRANKLIN COUNTY

Franklin county is one of the smallest in the state, having an area of 541 square miles. It had in 1890 a population of 3,308, in 1900, 4,890 and in 1910, 5,200.

Many important rivers flowing from Georgia and Alabama were formerly the great highways of communication, and this circumstance made the county a locality peculiarly favored by the Indian tribes. This is shown by the large number of Indian mounds which are frequent particularly along the Gulf shore and on the islands that border Apalachicola Bay. The city at the mouth of the river of the same name, is the county seat of Franklin county and this coast abounds in some of the richest oyster beds to be found in southern waters. For years the exportation of oysters and fish has brought immense sums of money to this section.

A large industry is in the manufacture of pine and cypress and, in addition, a considerable manufacture of lumber into finished products. A large variety of hardwoods of red and white cedar, black and white cypress walnut, ash, gum and bay timber abounds in the low lands of the county. The development of the agricultural resources, as in a number of other counties, has been delayed by the slow clearing of the timber from the lands, but the soil is capable of a wide variety of products, including generally the vegetables grown in this section, besides many of the fruits. Sugar cane is an especially attractive crop. Cattle-raising has been undertaken to a considerable extent.

Apalachicola is the county seat of Franklin county. Its material prosperity was seriously menaced by a destructive fire in May of 1900, which wiped out a large proportion of the business houses and nearly a hundred residences. This disaster has been almost forgotten in the splendid rebuilding of the city which has a bright future.

CALHOUN COUNTY

Calhoun county has an area of 1,192 square miles. Its population in 1890 was 1,681, in 1900 it was 5,132 and in 1910 it was 7,465. This county borders the Gulf of Mexico and is limited on the east by the Apalachicola river.

Its soils are largely of a loose sandy nature underlaid with clay; there are also some fine hammock lands. The timber consists principally of pine and cypress with large quantities of valuable hardwoods along the creeks and rivers.

Calhoun has much importance among the counties of Florida as being probably the largest producer of honey. Calhoun county honey has a reputation all its own in outside markets. The principal farm products are cotton, corn, oats, sweet potatoes, cane syrup, rice and peanuts. Blountstown on the Apalachicola river is the county seat.

JACKSON COUNTY

Jackson county has an area of 965 square miles. Its population in 1890 was 17,544, in 1900 it was 23,377 and in 1910 it had reached 29,821.

Along the rivers on the eastern boundary of the county is a narrow strip of extremely rich land extending the length of the county. Rising from this is a series of high hills and of high rolling pine lands, dotted with rich and dense hammocks of hardwood. The timber of this county includes a very large variety of valuable woods suitable for the manufacture of furniture, wagons, farming utensils, and similar products. The soil products are principally cotton, corn, oats, rice and sugar cane. While the other varieties of farming products can be raised economically and profitably, their cultivation on a large scale has not been undertaken. Grapes, plums, pears, figs, persimmons, apricots, quinces and pomegranates flourish here and better watermelons are found nowhere else. The pine lands of the county afford excellent ranges for cattle, sheep and goats, and those engaged in the industry reap large rewards.

A great necessity for the full development of the resources of this county is larger capital than has yet been brought to it. No section of Florida offers more in the way of fertile and cheap lands, of a desirable climate and variety of resources, and when the attention of developers shall be directed to this section, a more rapid growth may be expected than has yet marked its development.

Marianna is the county seat, and the principal business center. It has a population slightly in excess of two thousand.

HOLMES COUNTY

Holmes county, the smallest in area in the state, contains 458 square miles. Its population in 1890 was 4,336, in 1900 it was 7,762 and in 1910 it was 11,557.

The county generally is undulating although considerably above sea level, and in certain places high elevations are reached. The lands generally are sandy with a clay subsoil. They may be classed in general as high grade pine land with considerable area of fine hammock. The agricultural products are upland cotton, corn, sweet potatoes, cane syrup and peanuts. The sheep industry, also the raising of cattle, mules and horses is an important feature of the industries of the county. The principal population centers are Westville, the county seat, Bonifay and Caryville.

WASHINGTON COUNTY

Washington county has an area of 1,435 square miles. Its population in 1890 was 6,426, in 1900 it was 10,154 and in 1910 it was 16,400.

The Florida Legislature of 1913 created from the southern part of Washington county, the new county of Bay. The separate county organization has hardly yet been completed, and no official reports have been published by which the resources and products of the two counties have been separated. The present description of Washington county, therefore, must include with it the facts regarding Bay county. The little town of Vernon located near the center of the county, is the capital. It is surrounded by some of the best farming lands in the state and it is the center of extensive lumbering and naval stores interest. St. Andrews Bay, now in Bay county, is one of the widely known winter resorts of the state, as well as a summer resort for visitors from the interior of Florida and Georgia.

Stock-raising is one of the leading successful industries. Cattle and sheep thrive well on the native grasses. Special attention has been paid here to the improvement of the sheep stock and a high grade of wool is an article of large production. Similar attention has been paid to the improvement of cattle breeds, and Washington county is a section from which large quantities of excellent beef cattle are sent to outside markets.

The principal farming crops are cotton, corn, sugar cane, oats, rice, potatoes, peanuts and cassava.

BAY COUNTY

The reader is referred to the description of Washington county for the organization and resources of Bay county.

WALTON COUNTY

Walton county has an area of 1,382 square miles of land surface. Its population in 1890 was 4,816, in 1900 it was 9,346 and in 1910 it was 16,460.

The topography of the county varies, as does its soil. In the northern and western portions the surface is undulating, the soil is rich hammock land with heavy sand loam, well adapted to general farming. In the southern part the surface is varied and especially adapted to grazing, while in the eastern part of the county the land is rolling and rich. It is one of the best watered counties in the state, and flowing through each precinct are streams of pure, wholesome water, many of them having valuable curative powers.

A large diversity of crops is possible in the county, chief among them being short staple cotton, corn, hay, oats, sugar cane, potatoes, velvet beans and cassava. Stock-raising is one of the best and most profitable industries, and the annual wool clip is extremely valuable. The county has a vast area of timber lands, pine and hardwood. Naval stores operations are extensive and the revenue from them is large.

De Funiak Springs is the capital and principal business center. It has a population of more than two thousand. It is located three hundred feet above sea level, and here is located the State Normal School for white pupils, which has a large attendance from many parts of Florida. The educational interests of Walton county are extensive for both races and are supported enthusiastically by the citizens. The Florida Chautauqua is an institution of many years standing, and draws pupils from many states, north and south, during the winter seasons.

This section offers many inducements to home seekers migrating from the northern states, because they find here conditions in many respects closely resembling those which they have left behind. The steady increase of population for the past twenty years indicates a healthy growth toward a large prosperity.

SANTA ROSA COUNTY

This county has an area of 1,546 square miles. Its population in 1890 was 7,961, in 1900 it was 10,923 and in 1910 it was 14,897, indicating a healthful growth through the last two decades.

The county extends from the State of Alabama to the gulf. Its area is about one and one-half times that of the State of Rhode Island, and almost as large as Delaware. Until the year 1902, less than five thousand of its million acres of land were under cultivation. Large tracts are owned by sawmill and turpentine operators, much of which is for sale subject to the removal of the merchantable timber.

The soil products include every variety grown in this latitude, and special attention has been given to the cultivation of the fig, peach and grape. The soil is almost ideal for market gardening and a long list of vegetables is produced here. It is one of the greatest sheep-producing sections of the state, and cattle-raising is an important industry.

Milton is the county seat. It is located near the southern border; it is also an increasingly important commercial center.

ESCAMBIA COUNTY

The county of Escambia, one of the smaller divisions of this state, is one of the most important. It has an area of 657 square miles. Its population in 1900 was 28,313, in 1910 it was 38,029. It is the most western county in the state and it owes much of its commercial importance to its principal city, Pensacola, which is located on one of the finest harbors on the coast of the United States. This city has been made the subject of a special article elsewhere in this book, and needs no further description.

The agricultural resources of the county await their best and largest development. Among the more important agricultural products are upland cotton, corn, sweet potatoes, cane syrup, hay, Irish potatoes, pecans, peaches and pears. Much attention has been paid also to stock-raising and to the breeding of horses and mules.

The importance of Pensacola as a shipping port, in addition to the natural resources of the section, has brought to that city a large number of enterprising citizens and capitalists who are pushing the section to high and profitable development.

FOURTH CONGRESSIONAL DISTRICT

Area, 16,701 Square Miles—Population, 196,572—Density of Population, 11.8

This district includes the thirteen counties of Monroe, Dade, Palm Beach, St. Lucie, Osceola, Brevard, Orange, Seminole, Volusia, Putnam, St. Johns, Clay and Duval. This area borders the Atlantic side of the state from Key West to within forty miles of the Georgia line. The density of population in the northern section, which is probably the most thickly settled part of the state, is reduced by the large areas of sparsely inhabited territory in the south. It is the section which has been developed agriculturally and as a desirable resort for travelers, tourists and others, by the building of the Florida East Coast Railway. No part of Florida has grown with more rapidity since 1890; and the future promises a development even more remarkable.

MONROE COUNTY

The county of Monroe has an estimated area of 1,100 square miles, and a population in 1910 of 21,563, all but about 2,000 of this being centered at Key West, the southernmost city in the United States. This city, although separated by many miles of deep waters from the mainland of Florida, is the fourth in population in Florida; and at one time (in 1880) it was the largest city in the state.

Monroe county includes many of the Florida Keys, which number several hundred, although names have been given only to the largest. These are sparsely inhabited, many of them being untenanted. Key West has the unique distinction of being the only city or incorporated town in its county. The mainland portion of the county is largely the low lands of the southern Everglades; and, with the exception of being the scene of important events in the early history of Florida, it has no claim to distinction. The story of Key West, therefore, includes most that is noteworthy in the history of Monroe county. This city has received a large increment of commercial importance by the extension of the Florida East Coast Railway to its terminals on its wharves. Strategically it has been considered for many decades of the utmost importance to the United States, and the Federal Government built here many years ago fortifications that have been garrisoned with troops or marines. The importance of this location as a coaling station for the United States Navy and for commercial ocean traffic, will be increased and enhanced by the opening of the Panama canal.

Key West has large importance in the manufacture of cigars, and its factories, employing more than twelve thousand cigar makers, are located here. The waters surrounding the "Island City" abound in a larger variety of food and game fishes than any other point on the coast of the United States. Formerly sponge fishing was an important industry, and it was here that sponges from American waters were made an article of commerce. The sponge fisheries of Key West are still largely productive, but the center of the industry with its development, has been moved to Tarpon Springs on the Gulf coast.

To the stranger visiting this unique city for the first time, it has an appearance foreign and strange. Located on an island of the sea, a few miles long by a mile wide, it appears to be a low reef of rock arising from deep waters. But few buildings have been erected here rising above the second story, for the great storms that sweep over these southern latitudes have made necessary as little resistance to the winds as is possible to devise. Similar conditions control the buildings of Havana, Cuba, and other cities that border on the Caribbean sea.

Yet on this seemingly barren island of Key West has arisen a city of remarkable enterprise and well-earned prosperity, which in the increased traffic of the future will assume an importance hard to be imagined. Here are beautiful homes, well paved streets, a street car line, several institutions of learning and large wealth. The citizens of Key West, whose poetic inclinations must be fostered by the grandeur of ocean that sweeps all about them, resent any suggestion of the idea that they are not the most fortunate and happily located people on earth.

DADE COUNTY

This county has a land area of 2,733 square miles. Its population in 1910 was 11,933. Originally, Dade county included the present area of Palm Beach county, which lies to the north of it; and the history of the development of these two counties really began with the extension of the Florida East Coast Railway into this section.

The Legislature of 1913 created a new county from the northern section of Dade, which it called Broward county, after the late lamented ex-Governor of Florida. This action, however, was subject to ratification by the majority of the people of the section, which failed to approve the measure. In spite of its extreme southern location, Dade county includes as its county seat the thriving city of Miami, which, in less than twenty years, has grown from an Indian trading post to be a city with a population which is growing so fast that an enumeration today is wholly inadequate six months later. It is located in the center of a section of remarkable fertility, and with a wonderful variety of fruits and vegetables, many of which are unknown to the northern consumer. It is equipped with every municipal improvement and convenience that the most ambitious cities in the north can boast of. It has a splendid system of schools, churches of many denominations, and its enterprising citizens are planning the development of its harbor on Biscayne Bay to accommodate deep draft and ocean-going steamships. Its importance in the future is hardly to be estimated in the commerce of the state, and eventually the products of an immense and fertile territory will be shipped direct by water transportation to the markets of the world.

Homestead, lying twenty-eight miles south, is another center of rapidly developing agricultural and fruit growing interests. It is the last city on the mainland of Florida to be touched by the over-seas rail line of the Flagler system.

The area of Dade county includes a large number of the important Florida Keys. The western section of the mainland is largely occupied by the southeastern portion of the Everglades, and the possible development of this vast area for agricultural purposes will add much to the importance of these cities. Miami is one of the centers from which is being operated the development of the Everglades country, and here one of the largest of the drainage canals which are to lower the level of Lake Okeechobee, finds its way to the ocean level.

In the northeastern corner of this county is located Fort Lauderdale, well known in the early history of Florida as a military post, and now the center of a large fruit and agricultural development. A few miles south is the little city of Dania. The products of Dade county are largely from its groves and vegetable plantations. Citrus fruits reach their perfection here and immense groves of grapefruit and orange trees supply the northern markets with their earliest products of tropical fruits. It is in this county, more than in any other of the state, that the products of northern soils are grown side by side with the fruits of the tropics. In no section of Florida is the development of natural resources and possibilities being pushed with greater vigor than in the county of Dade.

PALM BEACH COUNTY

The county of Palm Beach has an area of 3,048 square miles, and the resident population in 1910 was 5,577. The county takes its name from the famous resort where are located the Royal Poinciana and The Breakers, two of the most famous resort hotels in the world.

Among the other important settlements and cities of the county, all of which are located on the eastern border thereof, are Hobe Sound; Jupiter, where is located the famous Government lighthouse known as the Jupiter Light; West Palm Beach; Lantana; Delray, and a few others of importance.

The soil products are the same as those of Dade county and their commercial value is but little less than that produced in the county to the south. The delightful atmosphere of ocean breezes and the wonderful tropical surroundings of these two counties have induced the building of many beautiful homes by northern investors who spend here from three to seven or eight months of each year.

ST. LUCIE COUNTY

St. Lucie county has a land area of 1,395 square miles and a population in 1910 of 4,075. This county was formerly a part of Brevard county, from which it was divided several years ago. Its principal city is Fort Pierce, which is also the county seat—this has a population of approximately two thousand. Other important points as centers of population are Waveland, Jensen, Eden, Sebastian, Ancona, White City, San Luis, Gifford, along the eastern coast of the county; and Okeechobee, a settlement of increasing importance at the northern end of the lake of the same name.

One of the most important land developments in this state has been undertaken in the northern part of this county. This is known as Fellsmere, and includes the drainage and reclamation of 120,000 acres of rich lands, which have a general elevation of eighteen feet above the ocean, and from which an intervening ridge of coquina rock has prevented the escape of the natural rainfall throughout the centuries. More than a million dollars has been spent in the development of this section, and though it is probably the largest undertaking of its kind, the example set here is being followed in the costly development of similar sections and tracts of land up and down the east coast of this state.

OSCEOLA COUNTY

Osceola county has 1,773 square miles of land surface. Its population in 1890 was 3,133, in 1900 it was 3,444 and in 1910 it was 5,507.

This county, named in honor of the great Seminole warrior, was created from portions of Orange and Brevard counties in 1887. Its surface is level, relieved here and there by ponds, lakes of considerable size, and by sparkling streams of water. It is bordered on the west by the Kissimmee river and by the lake of the same name. It contains the eastern portion of the Kissimmee Valley, one of the richest and most fertile sections in Florida.

It has large acreas of pine land which have fostered the development of the turpentine industry. It has also many small and rich hammocks of oak and hickory. Much of the land is open prairie and affords the best of native pasturage for cattle. In this county the cattle industry has been for many years most profitable. As in other counties of lower and middle Florida, the revolution of the cattle industry by the breaking up of great ranges is changing these conditions rapidly.

This county has large areas in farms and gardens on which citrus fruits, peaches, melons, squash, cabbage, tomatoes, beans, egg plant, and potatoes are raised in large quantities for the early markets. The county seat is the beautiful city of Kissimmee, which is located at the head of navigation on the river of that name. Its population in 1910 was above 2,100. It has a large reputation as a winter resort and an easy access is had by the Kissimmee river into Lake Okeechobee. Within recent years large areas of rich lands have been developed, and the settlement of the county by energetic farmers from northern and western states is going forward rapidly.

BREVARD COUNTY

Brevard county has an area of 1,025 square miles and its population in 1910 was 4,717.

It borders the Indian river for nearly seventy miles. Formerly it included the area which is now known as St. Lucie county. Brevard county is the location where oranges were originally cultivated along the east coast and its products made the Indian river fruit famous. The industry is being renewed on a large scale on the low muck lands, and the fruit of to-day bears up the reputation that was established years ago. Immense quantities of early vegetables of every variety are produced here and are among the earliest to mature for the northern markets.

Along the borders of the Indian river through Brevard and St. Lucie counties and extending somewhat into Palm Beach county, are thousands of acres of pineapples and this strip of land hardly a mile wide, produces practically all the "pines" raised on the eastern coast of the state. It has been and is an extremely profitable crop, and large fortunes have been made in its cultivation.

The county is traversed its entire length by the Florida East Coast Railway. The construction of this railway in the late '90s replaced the large transportation business over the Indian river, which was carried on by a fleet of flat-bottom, stern-wheel steamers, such as were known years ago over the length of the Mississippi river. The Indian river fisheries are famous and extremely profitable. Nowhere else is found, at least in merchantable quantities, the luscious pompano. Spanish mackerel and many other varieties of food fish are extensively exported to New York and other northern markets. The capital of the county is Titusville and this city is thriving under a new lease of life granted or brought about by the development of immense areas of the rich black muck lands that lie to the west and south of it. Among the other important cities in the county, most of them located along the Indian river, are Micco, Grant, Valkaria, Malabar, Melbourne, Eau Gallie, Bonaventure, Rockledge, Cocoa, City Point, Pritchards, LaGrange, Turnbull, Aurantia and Lyrata.

ORANGE COUNTY

Orange county has an area of 1,250 square miles. Its population in 1890 was 12,584. Owing to the effects of the great freeze in 1894-95 it was reduced to 11,374 in 1900, and by 1910 it had far more than regained all losses, with an enumeration of 19,107. Without question Orange county is one of the richest in soil, in climate and in its wealth of energetic citizens. By the Legislature of 1913 the county of Seminole was created from the northern part of Orange county, and by this change the rich territory bordering Lake Monroe and embracing the famous "Celery Delta" of Sanford, was transferred to other jurisdiction. This division of the county is so recent that separate statistics are not yet available, and necessarily the description of Orange county must, for the present, include that of the new division.

The soils of Orange county are varied, rich and adapted to the production of an immense variety of fruits and vegetables. All the citrus varieties, pineapple, guavas, Japanese persimmons, peaches, pears, grapes and strawberries are among the crops thriving here. Orlando was formerly the center for the raising of the higher grade pineapples, and although the product is limited, the fruit commands the highest prices in the markets.

The county is diversified by many beautiful little lakes and streams, by magnificent oaks and magnolias, and these with other attractions have made Orange county, particularly in the vicinity of Orlando, the winter residence place of hundreds of northern people. Magnificent homes have been erected, surrounded by all the charms that nature has to offer. The city of Orlando is the capital of the county, and in 1910 had a population of about 4,000. It is a city of beautiful homes, fine buildings, excellent municipal improvements and seemingly unlimited enterprise. The county has excellent rail transportation and probably a greater railroad mileage than any other county in the state, with the possible exception of Hillsborough. Scattered along these railroad lines are numerous little cities and towns all giving evidence of prosperity and enterprise. Without making invidious discussions against other localities in the state, it is but fair to state that the man who wishes to make his home in Florida through all the year or for the winter months, should at least visit Orange county before making his final selection.

SEMINOLE COUNTY

As already indicated in the article concerning Orange county, the new county of Seminole has within the past few months been given a separate identity. The principal town in this county is Sanford which has the reputation of being the richest city of its size in the south. This wealth has come from the development of agricultural products of which celery and lettuce have been the largest income producers, although there is a long list of other vegetables which are grown here with large profit. The Sanford celery section is underlaid by an inexhaustible supply of artesian water which is reached one hundred feet below the surface and rises through cased wells several feet above the surface of the ground. This solves the question of irrigation, which it is claimed has been an essential element in Sanford's progress toward wealth.

The new county although hardly six months old, has undertaken to extend to its borders a splendid system of hard roads which were begun several years ago. Although in area Seminole county may not be listed among the large county divisions, it seems probable that it is one of the richest proportionate to its size.

VOLUSIA COUNTY

Volusia county has an area of 1,256 square miles. Its population in 1890 was 8,467, in 1900 it was 10,000 and in 1910 it was 16,510.

The St. Johns river extends the entire length of its western boundary, and the Halifax and Hillsborough rivers border it on the east. These are separated from the ocean by a narrow strip of land, and form an important link in the Inland Waterway that stretches from Norfolk to Key West. Volusia county is historic in the fact that at New Smyrna was located, in 1767, the famous colony brought from Minorca and the islands of the Mediteranean by Dr. Andrew Turnbull. This was the earliest land development proposition undertaken in Florida. Thousands of acres were drained by a system of canals which exist to-day. Miles of good road were built which after one hundred and fifty years of use are in good condition. The remains of old Spanish missions, of the foundations of Dr. Turnbull's castle, of the old sugar mills and indigo stills are found scattered through the woods. To the student of history there is here a rich field not only in these remains of the eighteenth century, but in the numerous relics left by the Indian tribes which roamed this section before Ponce de Leon landed on Florida's soil. De Land is the county seat and its population in 1910 approximated 3,000. It is a charming town, the home of many influential and refined people who have been brought here by the John B. Stetson University, one of the largest colleges in the south and with a reputation second to none.

The area of Volusia county is more uniformly settled than that of any other county of its size in Florida. It is traversed along its eastern border by the Florida East Coast Railway, and the Atlantic Coast Line extends the length of the county near the western side. Among the beautiful cities along the coast is Ormond, where is located one of the famous hotels of the Flagler system, and the finest golf links in the south. Directly south are Seabreeze, Daytona and Daytona Beach, clustered on both sides of the Halifax river, which are famous for their natural beauty, for the magnificent beach on which the fastest automobile records have been made, and for the magnificent hotels and winter homes that bring each season thirty thousand visitors. Port Orange, Coronado, New Smyrna, Hawks Park, Osteen, Enterprise, Orange City, Lake Helen, Beresford, De Land, Highland Park, Glenwood, Spring Garden, De Leon Springs, Pearson, Seville, Hammond, Emporia and Jaffrey are a few of the more prominent and beautiful towns scattered through this county.

PUTNAM COUNTY

Putnam county has an area of 752 square miles. Its population in 1890 was 11,186, in 1900 it was 11,641 and in 1910 it was 13,100. This county and its capital, the city of Palatka, have been made the subject of a special article elsewhere in this book. Putnam county has a peculiar topography, for no other county in Florida includes such varieties and such strongly marked natural divisions.

The St. Johns river divides the southern portion of the county and borders the rest of it on the east for thirty miles. The southeastern part is divided so as to form a peninsula twenty-five miles wide, between the St. Johns river and Crescent lake. In this peninsula are high rolling hills, beautiful valleys, picturesque lakes, dense forests, ridges and low marshes.

Much the larger portion of the county lies west of the St. Johns river and is subdivided by many creeks and lakes. Through this runs the famous Ocklawaha river, whose channel penetrates a dense cypress swamp. In the western part of the county is an elevated ridge from one hundred and fifty to two hundred feet above the ocean level. Lake George is the largest body of water in Putnam county, although not entirely included within its boundaries. Crescent lake is also another beautiful body of water bordered by rich lands whereon have been placed many of the beautiful homes of the northern visitors. Another feature of Putnam county is the wonderful springs which pour forth immense volumes of water, abruptly forming navigable streams. These waters have in solution large percentages of sulphur, sulphate of magnesia, alum and other salts. They are reputed to be excellent curatives for skin diseases and rheumatism.

Putnam county has occupied a large place in the history of Florida, and it was particularly prominent as being the battlefield of many conflicts during the Indian wars.

Palatka is the market and shipping town for a large territory of rich agricultural lands. It possesses the first road and foot bridge across the St. Johns river, as one travels up its course from the ocean. This gives communication with a large and rich agricultural territory and has greatly increased the commercial importance of the city. The Florida East Coast railway also crosses the St. Johns river at Palatka, the bridge here being one of the two belonging to this system that span the river. The other is at Jacksonville. By this system and by water transportation shipping connections with Jacksonville are maintained and the products of the county are handled direct to outside markets.

Palatka is also the center of large cypress timber manufacturers and of a number of factories which convert the raw material into finished product.

ST. JOHNS COUNTY

St. Johns county has an area of 966 square miles. Its population in 1890 was 8,712, in 1900 it was 9,165 and in 1910 it was 13,200.

This county borders the Atlantic ocean for nearly seventy-five miles and although this water front is low and swampy, the lands of the central and western part of the county are rich pine hammocks with large agricultural value. This opportunity has been improved on a large scale in several sections of the county. The little city at Hastings, some twenty miles south of St. Augustine, has become almost famous for its production of Irish potatoes. When the freeze of 1895 destroyed the orange groves in the northern part of Florida, St. Johns county was practically eliminated from the list of counties that had something to sell. Through the enterprise of a few individuals, the land surrounding the present site of Hastings was developed by the planting of this crop with such success that it has become one of the important agricultural centers of the state. The potato crop is harvested during the late spring months and buyers from most of the northern markets compete in the purchase of potatoes as they come from the fields.

The fertility of this land is shown by its production of three crops each year, each one of which is profitable and rarely fails of large returns. Following the removal of potatoes, corn is planted on the same ground without replowing; this crop is gathered ninety days later when crab grass is substituted and this produces a yield of from three to four tons per acre of a high quality of hay.

Fruit growers in this section have developed large and profitable growths of citrus fruits. Pecans are a reliable crop and all the vegetables raised in the north grow luxuriantly here. The cattle industry is carried on on a moderate scale but with good results. The prosperity of the Hastings section is at least suggested by the substantial homes of the farmers. These buildings of brick or concrete, fitted with every modern luxury, including electric lights and porcelain bath tubs, give to the country a general appearance of being a suburb of a large city rather than a country settlement far removed from such a center of population.

It is probable that St. Augustine, the capital of the county, is far better known than the county which surrounds it. It is the oldest city in the United States, which has had a continuous existence from its foundation—in 1565. It has been the scene of war and strife through four centuries. Its quaint air of age contrasts strangely with the magnificent structures, hotels and public buildings which have been erected by modern enterprise and wealth. Old Fort Marion is the oldest relic of Spanish occupancy of the country, and Fort Matanzas, near the spot where occurred the massacre of the Huguenots by Menendez in 1565, is crumbling with age. St. Augustine is famous among tourists and travelers and it is probably the only city in the United States whose hotels could accommodate with comfort at least twice the resident population of the city. But it is no wholly as a resort for tourists that St. Augustine has its importance. It is becoming the center of a large development of agricultural lands which in the next decade is likely to increase its commercial interests many fold.

The county is traversed through a considerable portion of its area by the Florida East Coast Railway which crosses the width of the county three times.

Among the important centers of population and of agricultural development, besides those already mentioned, are DuPont, Bunnell, Espanola, Yelvington, Elkton, Hurds, Magnolia Grove, Orangedale, Pinehurst and Durbin.

CLAY COUNTY

Clay county has an area of 617 square miles. It had a population of 5,154 in 1890, of 5,635 in 1900 and of 6,116 in 1910.

It is watered by numerous streams and by many springs, and the St. Johns river on its eastern boundary. The agricultural possibilities of this county have not been extensively developed. Its large areas of pine forest and timber lands have delayed its agricultural progress. However, it raises valuable products of sea island cotton, corn, sweet potatoes and sugar cane. The county seat is Green Cove Springs, which is beautifully located on the banks of the St. Johns river. It had a population, in 1910, of nearly 1,400 people and for many years it has been the winter home of a large number of northern visitors. It has valuable manufacturing interests of brick and lumber.

A wonderful mineral spring, from which the little city takes its name, gushes from the earth pouring hundreds of gallons a minute into a little stream which reaches the St. Johns river near by. The medicinal qualities of this water are said to be very valuable, particularly from the fact that traces of radium have been found at least in sufficient quantities, so it is claimed, to give the water valuable curative properties.

Among the several important little cities in this county are Orange Park, Middleburg, Russell, Walkill, West Tocoi, Belmore, Spring Lake and McRae. Middleburg is one of the most important lumber producing centers in the eastern part of Florida and the lumber industry of Florida may fairly be said to have originated here.

DUVAL COUNTY

Duval county has an area of 786 square miles. It had a population in 1890 of 26,800 and in 1900 of 39,733 and in 1910 of 75,163. With the sub-division of Hillsborough county since the last Government Census, Duval county has the largest population of any in the state.

The larger part of Duval county is pine woods and marsh, and along the ocean border of the county are vast flat areas of swamp grass and low lands. The agricultural resources of Duval county although important have been but little developed. Less than ten percent of its arable lands are under cultivation and at the present time but little effort has been made to develop these resources, although the city of Jacksonville, the county seat, offers the largest and best local consuming market and the best shipping facilities in the state.

Jacksonville is the most populous city in Florida and is growing with remarkable rapidity. It has been described in a special article elsewhere in this book at sufficient length.

The fishing industry which centers along the St. Johns river and particularly at its mouth, was formerly largely remunerative. The value of this industry has been seriously decreased by the reckless use of its water resources and by the utter disregard of state laws to protect them. The industry still has large local value however.

The manufactures of Duval county, outside of Jacksonville, are largely in lumbering and turpentining. As this is an important distributing point for a large section of the state, a number of important manufactures are represented here. This is the third most important center for the manufacture of commercial fertilizers in the United States. Fertilizer materials are found here in larger abundance and in greater variety than at any other point in the world, and its importance in this direction is appreciated more fully by the manufacturers of Germany and of France than it is at home.

Duval county is a leader in the construction of good roads in Florida and it has expended since 1900, more than two and a half million dollars for these necessities.